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Editorial

Day Surgery is a concept and not a gimmick. Over several years now, we see many Day Surgery Centers (DSC), some have been started as a chain of centers and some are backed by 'Corporate' hospitals. though this will boost the growth and awareness of the concept, it can also lead to its premature death.

a true DSC caters to the needs of all class of patients, offering high quality, affordable surgeries, which are at least 30% cheaper than large hospitals. this is possible by adapting methods of reducing overheads and passing on the benefit to the patient with a reasonable return to the hospital and doctors. when used as a gimmick, the cost to the patient is just reduced by 5% to 10%. therefore, making these centers as anyother hospital using Day Surgery as a marketing gimmick and nothing else. Thus, defeating the whole evolution of One-Day Surgery as a concept.

Healthcare has become a bussiness, which is sad, but, even as a bussiness concept, I beleive, and it has been shown in several countries, that in the long run, owing to the attraction to the concept, the volume of work will makeup or the cost and profit. it is my belief, that, unless there is sustainability and some amount of finincial insentive, concept, however good they may be, do not work. Charitable and trust hospitals break even by transferring the cost to paying patient or by procuring donations.

There is increasing willingness by the patient to pay a reasonable charge for his treatment, if we are willing to add-on something extra along with it. And, returning to work within a few hours is the most important insentive for them. Insurance has not only accepted Day Surgery for reimbursment, they are in diaglogue for increasing the gamut of surgeries as well as making it easier for patients, by educating the agents.

Once again, in this issue of the Journal, we have several articles, all from our members. Without going into details of each and every article, I will let you read and be judge of the information shared by our member colleagues.

Though this may be my last Journal as an editor, I will continue to be closly associated with it, and do hope, it grows in volume every issue. My appeal to all our readers, become members and contribute to the growth of this Journal by sharing your experiances with us. You do not have to be a great writer to compile a scientific article, just follow the instructions at the end of this journal and send in your experiance.

Dr. T. Naresh Row

“One Day Surgery is a concept, evolved out of necessaty of economics, of time and money”.

- Naresh

Superficial Sacrococcygial Pilonidal Sinus: Minimal excision under local anaesthesia is sufficient

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Abstract:

15 patients who presented with superficial Sacrococcygial pilonidal sinus were treated in a clinic in Dubai. 3 were excluded as they had already under gone one form of treatment or other at hospitals or clinics elsewhere. 2 were lost to follow up after healing. They belonged to the age group 14 – 47. All patients were males. They came mostly from low income strata of the expatriate segment and were from India, Pakistan and Iran. All cases were operated under local anaesthesia without any sedation. All sinuses or fistulae were excised using diathermy and the tract were excised around a probe and allowed to heal from below. All patients were discharged home 2 to 3 hours after surgery and followed up as outpatient. Post operative pain was minimal. No wound infection was seen. Patients returned work within 4 to 6 days. Patient satisfaction was high. Ten patients were followed up for up to 48 months. In the latter part of the follow up, telephone interviews were used. There were no recurrences.

Introduction

Sacro-Coccygeal Pilonidal sinus is frequently seen in the surgical practice in Dubai. Most of them are superficial and the patients usually present with an abscess, infected sinus or a fistula. The problem is notorious for recurrence and hence various surgical strategies have been designed to tackle the problem, each procedure claiming superiority over the other. These are mostly aimed at deep sinuses. Very often the superficial intergluteal pilonidal disease is treated like a deep sinus which may require complicated flap procedures.

I feel a distinction has to be made between a deep sinus and the superficial intergluteal fistulae which do not invade the deep tissues.

Background

When the problem first appears, it may present as an intergluteal abscess, a discharging sinus or as fistula. In Dubai, they seldom reach a surgeon as they are usually handled by General Practitioner, who manage them with dressings and antibiotics or rarely, by doing a limited incision and drainage. Patients on their part prefer to go home if surgical treatment is suggested, during their annual holidays. By the time the lesion would have become chronic. They avoid surgery in Dubai because surgery in a hospital is beyond the reach of an ordinary expatriate unless they are covered by medical insurance. The lower income workers have health insurance which does not cover surgical procedures. Large percentage of the labourers and white collar workers live in accommodations with limited sanitation

facilities. The labourers live in labour camp dormitories and the white collar workers live in rooms which are shared by 4-6 people. This situation makes it difficult for them to have Sitz baths etc. which are important part of post operative care. This was the situation in 2004-2006 when these 10 patients were treated. This procedure was designed for the low income group expatriate workers in Dubai.

Patients

All were male patients. The youngest was an Indian boy aged 14 and he oldest was an Iranian aged 48. They belonged to different nationalities, Indians, Pakistanis, Iranians and Egyptians

Setting

All operations were performed in the minor operation theatre of 'Doctor's Clinic', Al Nasser square, Deira, Dubai.

A standard protocol was followed for the preoperative assessment, surgical procedure, and conduct of surgery. The follow up was also done according to pre-decided protocol.

Pre operative assessment

A general medical assessment was done first. Pre operative assessment included the CBC and Blood Sugar.

Patient Education

This is an important part of any day surgical procedure.

The problem, operative procedure and follow up protocols were explained at length to the patient during the first visit. The Pre and postoperative photographs of the patients operated in our clinic was used to explain the procedure.

Prophylactic antibiotics

In infected cases prophylactic antibiotics were started on the day before patients were taken up for surgery the next day in case of abscesses. In diabetics, the antibiotics were started in the evening before surgery, even if there is no active infection.

The Procedure

All cases were done in the morning, and patients were observed for up to 2 hours before discharging them home. The procedure is standardised. The same surgeon and one of the two staff nurses perform the procedure.

Prone position with the buttocks spread apart with adhesive tapes, secured to the table railings. The surrounding area was shaved just prior to surgery up to 10 centimetres all around the lesion.

For the first 3 cases 10- 15 mls 1% Lignocaine with Adrenaline was used. For the rest of the cases 10 ml 1% Lignocaine was supplemented with 10-15 ml of 0.25% Bupivacaine was used. No sedation was used.

After the area became completely anaesthetised, a thin malleable metal probe with a blunt tip is passed through the discharging sinus up to the abscess or abscess cavity as the case may be. An effort was made to identify all the other pits in the midline using magnifying glass. The tract was excised around the probe. This is similar to Anal Fistulectomy. The incision was extended to go around the other inactive pits also if they were identified. The specimen is removed as one piece. The bleeding was controlled with diathermy. Where there was only one opening (sinus) the probe was passed as high as it would go and the tract was opened up. The fibrous tissue forming the tract was then completely excised including branches if any. *The normal tissue removed around the fibrous tract is minimal as opposed to wide excision.* Complete control of bleeding is ensured. Where necessary, Ethamasylte solution was instilled in to the wound and packed for a few minutes. Then Povidone Iodine cream or Mupirocin cream was applied to the wound and 4x4 gauze loosely inserted in the wound. Tight packing was avoided. Non-stick dressing is placed over the wound. Patients are sent home 2 to 3 hours after surgery after making sure there is no active bleeding.

Immediate post Operative Management

Once the patient is discharged home, postoperative pain is controlled with oral Diclofenac Sodium 75mg sustained release tablets. Those who are on prophylactic antibiotics are advised to continue them for another 48 hours. All were advised warm water Sitz bath, if possible.

Patient was called back on the day after operation, the dressing is changed. The loose packing is removed. Wound is cleaned with 5% Povidone Iodine solution mixed with Hydrogen Peroxide and dressed with Mupirocin cream. Wound is not packed any more.

Follow up

From the third day on wards, the patient is advised to remove dressings at home and have warm Sitz bath if it is feasible and to apply Povidone Iodine ointment or Mupirocin cream twice daily. Where it is not possible to have Sitz bath he is advised use the health faucet for about 3 to 5 minutes, then bathe normally using a mild non medicated soap. Those who had watery discharge were advised to use folded face tissues and to change them as frequently as needed. Mupirocin or Povidone iodine ointment is advised during the first weep post operatively, thereafter it was discontinued. The patient is advised follow up visits on the 4th postoperative day and 7th day. There after he is followed up every 7 days to check the progress of healing. They are advised to shave all around the area up to 10 cm.

10 patients included in the study were followed up to 48 months. Post operative pain could be easily managed with Diclofenac sodium sustained release tablets. There were no recurrences. Patient satisfaction was high.

Discussion

Intergluteal Pilonidal Sinus is not a rare problem in general surgical practice. This is seen in all nationalities and ethnic groups. It is an embarrassing problem restricting the social life of the sufferer. They also loose working days due to this recurrent problem, if untreated.

Presentation may be as a sinus with the external opening in the natal cleft, the sinus tract going cephalad towards the small of the back. The second presentation is as an abscess just above the natal cleft. The abscess once it breaks down and discharges pus becomes a fistula and behaves like superficial Perianal fistula, one opening in the natal cleft pits and the other end appearing in a little off the midline in the sacral or region or buttocks. The healing and breaking down cycle repeats exactly like the Perianal fistula. Therefore the treatment of this entity should not be by the methods designed for a deep Sacrococcygeal pilonidal sinus.

All of them have pits in the midline between the buttocks in the intergluteal area, which is an embryonic fusion site. Hair is present in the sinus /fistulous tract in most of the cases but there can be sinuses /fistulae without hair.

Here we have to make a distinction between the superficial intergluteal sinus/ fistula and the deep intergluteal sinus.

Incidence

In the US the frequency is 26/1000 population. ^(1,2) we do not have the statistics in UAE regarding the prevalence of this problem. There are no available statistics from UAE. The problem is more prevalent in the second to fourth decade of life. Males are more frequently affected than females

Associated factors

1. Midline pits
2. Hirsutism
3. Family history

Hormonal factors

The fact that Pilonidal sinus is not seen in pre pubertal individuals is due to the fact that hair growth markedly increases after puberty. It is rarely seen after 45. ⁽²⁾

Buttock function

Activity associated with buttock function- prolonged sitting and the grinding movement while walking or getting up from sitting position are thought to propel the hair upwards through the midline pits in the natal cleft ⁽⁴⁾

Personal hygiene

Prolonged periods of sweating and poor personal hygiene also pre-dispose to sinuses getting infected. 80,000 cases were reported by the US Army during the Second World War.

Family history

Family history has been noted in some studies ^(2,3)

Obesity

Obesity was thought to be a factor associated with development of Pilonidal sinus. Some recent studies dispute this.

Pathogenesis

A congenital theory has been propounded. Most authors accept this to be an acquired condition. The mid line pits were found to be indentations of the skin containing keratin plugs ^(4, 5)

Investigations

Ultrasonography has been found to be an excellent tool to gauge the depth of the sinus/ fistula and to identify the branches if any. ⁽⁶⁾This helps in segregating the superficial from the deep, thus helping to choose suitable surgical procedure. MRI ⁽⁷⁾ can be used to distinguish between pilonidal sinus/fistula from a fistula- in- ano.

Treatment

Surgical treatment is the only option available for this condition. Various modalities of surgical treatments are being recommended. They include wide excision and laying open

sinus and its branches allowing it to granulate, wide excision and allowing the wound to granulate, eccentric excision and primary closure. ^(7,8) Unacceptable recurrence rates have been noted in all methods. It would be beyond the scope of this discussion to elaborate or debate on procedures designed for the treatment of deep pilonidal sinus. Karydakos ⁽⁷⁾ method of eccentric excision and primary closure has been shown to have the least recurrence rates in the few large series published. ⁽¹⁰⁾

The comparison here is between primary closure and healing by granulation. Primary closure has quicker wound healing but has small but real risk of higher recurrence rate. At the end of 1 year, there is no difference in the problem ^(11, 12, 13)

The type of patients encountered in Dubai, prompted me to look for an affordable surgical procedure for the average expatriate employee. This should be economical, should be able to be performed in an out-patient setting, and follow up procedures should be easy to comply with.

I have found that removing the sinus tract completely and excising all the midline pits with a small rim of normal skin is adequate remedy for the treatment of the problem, since all my patients had superficial lesions. Following up the patient meticulously till the wound heals completely from below by granulation is an important aspect of management. This prevents premature closure of the skin leading to re-establishment of a tunnel for future penetration of loose hair in the area. Primary closure is avoided for another reason too. The toilette facilities in most labour camps are the squatting type closets. Squatting puts more strain on the suture line than when using the western sitting type of closet. The method is simple, and adequate excision can be done under local anaesthesia. ⁽¹⁴⁾ There is no significant postoperative pain. Most patients go back to work in 5 days time.

The post operative problems are:

- (1) Some serous discharge from third or fourth day for up to tenth day.
- (2) The time taken for complete healing of the wound.

Both issues are addressed by simple measures like teaching them to change their own dressings, keeping the area clean with regular showers and educating them about the healing process in this particular problem. Patients have been satisfied with the treatment. They accepted the watery discharge as part of healing process. Since they can go back to work and there is hardly any pain, the patients were not concerned about the long time taken for the complete healing. The patient satisfaction was high.

The costs incurred in this procedure done as a day case is only 20% of the costs incurred in a hospital setting.

There were no instances of postoperative wound infection in this series. In one patient a midline pit was missed during

the primary procedure and had to be excised and connected with the main wound during one of the follow-up visits.

Summery

15 patients with superficial pilonidal intergluteal sinus were treated in a private clinic in Dubai. 3 patients treated primarily in other institutions and 2 who were lost to follow up were excluded from the series. 10 patients were followed up. All Patients were male and was aged between 14 and 47. They came mostly from low income strata of the expatriate segment and were from India, Pakistan and Iran. They were all treated by simple excision under local anaesthesia as day cases. The stay in the clinic was 2-4 hours. The pain is minimal and patient can go back to work in 3 to 5 days. Complete wound healing took 18 to 56 days (mean 30.1), but this did not affect their work or study. The coast of treatment was 20% of what would have incurred if the procedure was done in a hospital. Had I gone for primary closure, they would have had to be admitted at least for day and would have lost more days of work. All patients were followed up to 48 months. Later part of the follow up was done by telephone interviews.

Conclusions

Superficial Pilonidal Sinus should be treated as a separate entity as it behaves differently from the deep sinuses. Surgery for the problem should be designed taking in to consideration the affordability, living conditions and patient compliance. They can be successfully treated with simple excision under local anaesthesia at low cost.

Authors note:

After this experience the author has continued to treat the superficial intergluteal sinuses and fistulae with excision without primary closure under local anaesthesia as day cases.



Fig. 1: Pilonidal Sinus with abscess



Fig. 2: Probe in the tract



Fig. 3: Post Excision



Fig. 4: Almost healed with a residual pit



Fig. 5: Recurrence

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HYSTERECTOMY AS DAY-CARE

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Introduction:

Hysterectomy is the most common gynecological operation performed. It ranks second to Cesarean Section. Each year, more than 600,000 hysterectomies are done. About one third of women in the United States have had a hysterectomy by age 60, with 75% of these being abdominal hysterectomies and only 25% being vaginal hysterectomies in a recent review¹.

A study revealed that prevalence of hysterectomy rose with age, maximum being in 45-54 year age group². Hysterectomy rate in an Indian study was observed to be 7% among the married women aged above 15 years.^{3,4}

It has been said that the chances that a woman will have hysterectomy depends on her age, social status, where she lives, and the sex of her gynecologist! Laparoscopic hysterectomy is slowly but surely replacing abdominal hysterectomy and a time will soon come when abdominal route would be the second choice and would be done only if vaginal or laparoscopic surgery isn't possible or have failed.

Indications:

GYNECOLOGICAL: in order from most common.

1. Prolapse
2. Fibroids/ leiomyomas
3. Adenomyosis
4. DUB
5. malignancy: carcinoma cervix, cancer endometrium, ovarian tumors, and other malignancies of genital tract.
6. pyometra, hematometra, genital tuberculosis, PID, rudimentary horn.
7. chronic inversion of uterus.
8. Chronic pelvic pain.
9. mentally retarded patient who cannot be relied upon to take care of menstrual function, risk of pregnancy (controversial!!)

OBSTETRIC:

1. Rupture uterus
2. Atonic PPH
3. Gestational Trophoblastic disease.
4. Ante partum hemorrhage: abruptio placentae, placenta previa.
5. Septic abortion, puerperal sepsis.
6. Placenta accreta.
7. Cervical pregnancy.

Approaches:

1. Abdominal: usually the route for malignancy surgery and for obstetric indications.
 2. Vaginal.
 3. Laparoscopic (lap).
 4. Lap assisted vaginal hysterectomy.
 5. vaginal assisted lap hysterectomy.
-

Vaginal Hysterectomy Compared With Abdominal Hysterectomy :

- Shorter hospital stay.
- Faster return to normal activity.
- Fewer infections.
- No scar.
- Lesser chances of paralytic ileus as bowel handling is less.

Vaginal Hysterectomy Compared With Laparoscopic Hysterectomy :

- Shorter operating time.

Laparoscopic Hysterectomy Compared With Abdominal Hysterectomy:

- Faster return to normal activity.
- Shorter hospital stay.
- Less loss of blood.
- Fewer infections.
- Longer operating time.
- Increased risk of injury to the urinary tract.
- Cosmesis.

Choice of the type of hysterectomy:

Vaginal	Abdominal/laparoscopic
<ol style="list-style-type: none">1. Cause is prolapsed2. < 12 weeks size (though competent surgeons can remove upto 20 weeks)3. No adhesions, uterus is mobile not fixed.4. No adnexal pathology5. Salpingo-oophorectomy not required.6. Abdominal exploration not required.	<ol style="list-style-type: none">1. When the cause is large fibroid or suspicion or the treatment of cancer.2. Previous surgeries, dense adhesions.3. Ovaries have to be removed.4. Adnexal pathology is present.

A recent Cochrane review recommends vaginal hysterectomy over other variants where possible. Laparoscopic surgery offers certain advantages when vaginal surgery is not possible but has also the disadvantage of significantly longer time required for the surgery.

In direct comparison of abdominal (laparotomic) and laparoscopic techniques laparoscopic surgery causes longer operation time and substantially higher rate of major complications while offering much quicker healing.^{5,6}

Recent randomized trials comparing total laparoscopic hysterectomy (TLH) and vaginal hysterectomy (VH) have produced conflicting results. The role of TLH in women suitable for VH remains uncertain. A metaanalysis of randomized studies comparing TLH and VH for benign disease found no differences in perioperative complications, either total (pooled odds ratio, 0.87; P = .74) or by grade of severity, were demonstrated. TLH was associated with reduced postoperative pain scores and reduced hospital stay but took longer to perform. No differences in blood loss, rate of conversion to laparotomy, or urinary tract injury were identified. They concluded that TLH may offer benefits compared with VH for benign disease, although this analysis is likely underpowered for rare complications. Further studies of long-term outcomes, including prolapse, urinary incontinence, and sexual function, are required.⁷

Vaginal hysterectomy as day-care??

Indian surgeons like the famed Dr NA Purandare and Dr Shirodkar had pioneered many techniques in gynecological surgeries, and vaginal surgery is an art that is still being practiced widely in our country. A trained gynecologist shall be able to do many of the hysterectomies vaginally, but converting it to day-care takes a change of mindset in patient and doctor too. Our past-president of FIGO Dr Shirish Sheth has published many works on vaginal surgery...another colleague from Indore Dr Kawita Bapat has a series of over 3000 vaginal hysterectomies done as day-care (personal communication) and a young surgeon from Akola Dr Rajesh Modi is having workshops demonstrating TLH and VH as day-care procedures.

Conclusion:

There is a definite trend in making hysterectomy into a day-

care procedure...all it needs is a change of mindset!! It is not only possible but also will translate into patient benefit in many ways if applied judiciously.

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Office treatment of hemorrhoids.

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Introduction

Hemorrhoid disease is one of the most frequently occurring, disabling conditions of mankind. The prevalence ranges from 1 in 25 to 1 in 30 individuals. In normal conditions, high-fiber diets and bulk laxatives are effective in relieving the symptoms of hemorrhoids, easing defecation and regulating bowel habit and can be used liberally. Hemorrhoids are required to be appropriately classified so that the treatment can be individualized. Minor or asymptomatic hemorrhoids usually do not require any treatment. Fixation procedures may be employed in the office for first-, second-, and minor third-degree hemorrhoids. These techniques may be employed with local anesthesia and in an outpatient setting.

Most patients with symptomatic hemorrhoids can be successfully treated by minor procedures and can avoid the need for extensive surgical interventions. Treatment is often aimed at relieving symptoms rather than improving the appearance of the anal canal. Patients with hemorrhoids can be distinguished into two groups:(1) young people, usually men, whose main symptom is bleeding and anal discomfort; and (2) older patients or women, in whom prolapse is the principal complaint. It has been found that a procedure aiming at relieving anal spasm is most suitable for patients with anal pain and bleeding, whereas fixation of the mucosa is most appropriate for patients with prolapsing piles.

Outpatient treatment

Interventional procedures are performed in the office to treat grade 1 hemorrhoids unresponsive to conservative methods discussed earlier; and for second and third degree hemorrhoids. Treatment is directed at the base or pedicle of the hemorrhoid, which lie above the dentate line. If performed correctly, these procedures are almost painless. Various office procedures like injection sclerotherapy; ablation using various forms of heat, rubber band ligation and hemorrhoidal artery ligation are aimed at restoration of the prolapsed or congested hemorrhoids back into the anal canal by submucosal fibrosis and fixation.

The consensus on proposing appropriate treatment option rely on following issues- (1) the aim of treatment should be induction of fibrosis to replace the hemorrhoidal cushions back to their normal position, (2) only the internal hemorrhoids should be treated through office procedures, (3) hemorrhoids need not be treated unless they produce symptoms, (4) only those far-advanced hemorrhoids in which there has been extensive fragmentation of the supportive connective tissue need be treated surgically, and (5) treatment should be adjusted according to the stage of the hemorrhoids.

Injection sclerotherapy-

Injection sclerotherapy for hemorrhoids has been practiced for approximately 100 years and gives considerable relief for varying periods of time. This is an effective and safe method of treating Grade I and II hemorrhoids. The injection causes a fibrous tissue reaction in the submucosa of the upper anal canal and lower rectum. It causes shrinkage of tissue by necrosis and adhesion as a result of the ensuing inflammatory reaction. A combination of sclerotherapy and rubber band ligation has also been found to be effective in controlling rather large hemorrhoids.

Many different substances have been used as sclerosant, which include Polidocanol, Ethanol, Sodium, Phenol, n-dodecane, Fibrin Foam, Biotrol, Epinephrine, Tetracycline, Ethoxysclerol, Sotradecol foam, quinine, a combination of aluminum potassium sulfate and tannic acid called as Zione, and 23.4% saline; but sterilized almond oil containing 5 percent phenol is the most common sclerosant used.

The injection is placed in the submucosa of the upper anal canal, well above the sensitive epithelium. Following rigid sigmoidoscopy, the hemorrhoids are visualized on proctoscopy and the proctoscope is advanced until the hemorrhoidal tissue has almost disappeared from the lumen. Three 5-ml injections of 5 percent phenol in Almond Oil are administered submucosally just above the bulk of hemorrhoidal tissue using a special syringe, with the bevel of the needle facing the mucosa. Correctly performed, the technique produces elevation and pallor of the mucosa

without significant discomfort to the patient.

A transparent anorectoscope has also been proposed as an alternative to conventional scopes used for sclerotherapy. It is claimed that by using this scope, the grade of hemorrhoids of the patients can be evaluated accurately through the transparent wall of the scope, and the device facilitates easier and safer sclerotherapy under clear direct vision, compared to the conventional free-hand-style treatment.

Few recent studies on the sclerotherapy of hemorrhoids have led to a change in therapeutic objectives. Accordingly, in the case of enlarged symptomatic hemorrhoids, the caudally displaced hemorrhoidal cushions should be fixed back above the dentate line. This is achieved by injecting the sclerosant into the base between hemorrhoids and the adjacent muscular layer. This does not lead to destruction of the hemorrhoids with possible impairment of their function, but causes their fixation with the underlying structures. By this approach, prolapse of the hemorrhoid could be arrested along with control of bleeding and other associated symptoms.

Complications

Injection of sclerosants in hemorrhoidal cushion can be an effective and easy procedure for early grades of symptomatic hemorrhoids in most of the patients. However, the treatment can be painful even when administered by those who are experienced enough in doing this procedure. Caution must be exercised before counseling patients to have injection treatment. A patient with minimal symptoms who had been advised to undergo injection treatment without proper counseling might get agitated if serious after effects ensue. All such patients should be made aware that the treatment may be ineffective, that pain can be experienced, and that complications can occur. It is advised that antibiotic prophylaxis should be used before sclerotherapy in patients with valvular heart disease or compromised host defense as bacteremia has been found in 8% of patients undergoing sclerotherapy.

Rubber band ligation

Outpatient ligation of symptomatic hemorrhoids was first described by Blaisdell in the 1950s. Barron popularized the technique using a modified version of the Blaisdell in 1963 and is the most commonly used outpatient treatment for hemorrhoids.

The rubber band, which is made of soft elastic or latex, is applied to the base of the hemorrhoidal cushion by a device which sucks or grasps the hemorrhoidal mass and dislodge the expanded band from a pile banding gun which recoil back and get snugly fitted to the pedicle of the hemorrhoid to strangulate a 'polyp' of the insensitive mucosal or

submucosal part of the pile above the dentate line. This band serves two purposes. One, it reduces the excessive bulk of the disrupted anal cushions, and two; it encourages adhesion of the hemorrhoid distal to the band to the underlying internal sphincter through an inflammatory reaction.

Procedure- The patient is laid down on the left side, with knees drawn up and buttocks projecting over the operating table. Few others prefer to do it in prone jack knife or lithotomy position. The procedure is performed through the proctoscope, which is inserted and placed about 1-2 cm. above the dentate line using K-Y gel as a lubricant. The hemorrhoidal cushion is allowed to prolapse into the lumen of proctoscope. The prolapsing mass is then grasped with a forceps or is sucked into the ligator. A suction ligator is better in comparison to the conventional apparatus, as this does not require an assistant. With the surgeon holding the proctoscope in one hand, using low-pressure vacuum suction, the hemorrhoid pedicles are drawn into the rubber band barrel flush on to the mucosa with the hand-gun like apparatus, which is held comfortably in the other hand.

It is important that the patient should not experience any pain when the cushion is sucked. But if pain is experienced, then the grasping should be done in a more proximal position. The tissue is drawn into the drum of the ligator until it is taut, and the gun is fired to expel the rubber O-ring with an inner diameter of about 1 mm around the base of the hemorrhoid. The strangulated hemorrhoid becomes necrotic and sloughs off, while the underlying tissue undergoes fixation by fibrotic wound healing. This usually requires a week or 10 day's time.

Usually all the hemorrhoidal cushions can be ligated in the same session. Few reports mention that multiple ligation of hemorrhoids are fraught with more pain and bleeding and should be performed in succession banding one or at the most two hemorrhoids in one sitting.

It is wise to watch the patients treated by rubber band ligation in the outpatient clinic for 1-2 h following the procedure, in order to detect any early complication as hemorrhage and pain. The patients should be informed about the progress of the treatment i.e. fall of the necrosed hemorrhoidal nodule and that they will experience some discomfort and bleeding for the next few days. The patients are discharged with an advice for high residue diet, mild laxative to soften the stool, local anal hygiene, avoidance of straining, and information concerning early and late complications.

Complications of rubber band ligation

The complications of RBL are significant. As many as a quarter of patients undergoing the procedure are unable to carry out normal activities on the day of the procedure and a significant proportion have fainting attacks. The

complications, especially pain, occur even if it is certain that the bands have been applied above the dentate line.

Minor complications include hemorrhoid thrombosis, band displacement, band related abscess, mild bleeding, and formation of mucosal ulcers.

Major complications include urinary retention, delayed massive rectal bleeding, pelvic sepsis, and perianal abscess requiring admission to the hospital. Massive life-threatening lower gastrointestinal hemorrhage in a patient taking aspirin has also been reported.

Rare complications include- Tetanus, death due to fulminant perineal sepsis, endocarditis leading to septic pulmonary and renal emboli, faecal incontinence, perianal fistula, priapism, and deaths resulting from bacterial septicemia or toxemia.

Rubber band ligation should be done with caution in HIV positive patient as complication in the form of development of supraleator abscess needing a diverting sigmoidostomy has been reported.

In conclusion, rubber band ligation of internal hemorrhoids need not be abandoned; however, the indications should be clear, the technique mastered, and a close patient follow-up should be maintained.

Use of different forms of heat for hemorrhoid treatment:

The application of heat or cold is a well-known method in the treatment of hemorrhoids. The former, using electrocoagulation, has not been widely practiced for many years because of the high complication rate. Cryotherapy has its proponents, but is often uncomfortable for the patient, time-consuming for the surgeon, and may be associated with complications such as severe mucous discharge, ulceration, and incontinence if sphincter damage occurs. Few others are relatively safe and effective like the photocoagulation, laser, and radiowaves.

Infrared photocoagulation

Infrared photocoagulation is used as an instrumental treatment for bleeding hemorrhoids. During this procedure the tissue is coagulated by infrared radiation. For treatment, mechanical pressure and radiation energy are applied simultaneously to ablate the blood supply to the hemorrhoidal mass. This method was described by Neiger in 1977.

Infrared radiation causes protein coagulation over an area of 3 mm and to a depth of 3 mm; this is immediately visible as a white spot at the point of application. Over the course of the next one to four weeks, a small ulcer, which heals by cicatrization, appears. Presumably, this process reduces the blood flow to the hemorrhoid followed by a tethering of the

mucosa to the underlying tissues. The apparatus (Redfield Corporation, NJ, USA) produces infrared radiation from a 14-volt Wolfram-halogen projector bulb surrounded by a gold-plated reflector and focused by a photoconductor. The tip of the instrument is protected by a polymer-coated cap to prevent adherence to the tissues. The power supply unit has a built-in timing device that allows variation in the duration of radiation. A one second pulse is used in the treatment of hemorrhoids. The infrared probe is applied to the base of the hemorrhoid at the site normally used for injection sclerotherapy. At least three points of spot weld is produced at the pedicle of each hemorrhoid, and then the probe is angled through 90° in a clockwise direction for the second application. Up to six points can be coagulated per hemorrhoid, along the base, depending on its size.

LASERS

Diode, Nd: YAG and CO₂ lasers have been used to coagulate first-degree and second-degree hemorrhoids by using the fiat contact probe. This is applied around the hemorrhoid in a rosette fashion similar to infrared coagulation. The power used is between 5 and 10 W for two to three seconds, with a coaxial water flow. The Nd: YAG laser is a very expensive and extremely powerful instrument that can destroy muscle in addition to hemorrhoids. Laser therapy is expensive and potentially dangerous, and advantages generally have not been substantiated by controlled clinical trials.

Direct Current electrotherapy (hemorrhoidolysis)

A direct current technique popularized by gastroenterologists was introduced in 1987. Direct current therapy (Ultroid technologies, Florida) is applied via a hand-held probe. It is claimed that all degrees of hemorrhoids are amenable to this therapy. A grounding plate is placed on the patient's thigh and direct current applied through a probe placed via a proctoscope with the probe held in place for ten minutes.

The probe is initially placed over the mucosa over the hemorrhoid base, and the current is increased to 2 mA. After increasing the current slowly to the maximum tolerable level, it is gently pushed through the mucosa into the hemorrhoidal tissue. The current is then increased to 10 to 16 mA.

To hold an anoscope and probe in place for ten minutes seems a bit much. Because of the time taken to treat each hemorrhoid, it is seldom possible to treat more than one hemorrhoid at each outpatient visit. At subsequent visits the remaining hemorrhoids are similarly treated, and if necessary, any pile that has not resolved after one treatment is retreated.

A prospective, crossover trial of direct current electrotherapy found no difference between medical therapy and the use of this modality.

Bipolar Coagulation

Griffith used a bipolar probe called Bicap ® (Circon, Santa Barbara, CA) to treat first degree and second-degree hemorrhoids. The basis of using bipolar coagulation is to induce tissue destruction, ulceration and ultimately fibrosis by local application of heat. Bipolar diathermy is applied via a proctoscope using a hand-held probe controlled by a foot switch. The probe is placed directly onto the hemorrhoid, above the white line. Tissue coagulation occurs almost immediately when the probe is activated. All visible hemorrhoidal tissue are treated at each session, but care is taken to avoid circumferential injury. Bipolar diathermy has the advantage of multiple applications to the same site as it produces little further penetration of the tissues due to changes in the electrical properties of the eschar. Bipolar diathermy produces smoke during hemorrhoid treatment, which may obscure the operator's view.

Cryosurgery of hemorrhoid

The concept of cryosurgery for hemorrhoids is to induce cellular destruction by rapid freezing followed by rapid thawing of the hemorrhoidal tissue. Liquid nitrous oxide and carbon di-oxide are used to produce this freezing. The liquid nitrogen circulates through a system of tubes and cools the tip of the cryoprobe to freezing temperature.

For internal hemorrhoids, freezing is done for 1 to 3 minutes, while for the external hemorrhoids it is for more than 2 to 4 minutes. Postoperatively, 2 to 3 hours after freezing, the hemorrhoids swell and become red and a discharge appears which at the beginning is serosanguinolent but later it becomes purulent. The discharge lasts until 14 days, and then it gradually decreases. A popular method twenty years ago, cryosurgery has fallen out of favor because of the pain and possible complication involved.

Cryosurgery can be more painful than other medical surgeries. Furthermore, the open wound can become infected. Also for as long as a couple of weeks after surgery, patients can have abnormal rectal discharge or foul odor, which may require the use of absorbent pads. The discharge first is watery and then turns purulent. The piles slough and become very smelly and rather tender. The patient is therefore advised to have daily warm baths and wear an anal pad.

The main criticisms of cryosurgery are that most patients complain of pain, which is occasionally more severe than that of any other procedure; the incidence of residual hemorrhoids is high, with a range of 25-50 per cent; the foul-smelling discharge often segregates the patient from the public; and complications are no less than with surgical procedures, while the success rate is a low 51-70 per cent. Few other complications include skin tags, fatal meningitis, bleeding and perianal abscess.

Radiowave Coagulation

The radiofrequency generating unit uses a disposable probe with an electrical current flowing between two flat electrodes (positive and negative) aligned at the tip. Activating the unit for two seconds in three or four areas of the same hemorrhoid complex effectively coagulates the vessels. In radiofrequency ablation and coagulation technique, a ball electrode is used to coagulate the whole pile mass by gently rotating the electrode over the hemorrhoid. The power of the radio surgical unit is adjusted so as to produce shrinkage and a gradual change of hemorrhoids till it gets a dusky white color (blanching) indicating a satisfactory coagulation necrosis. Radiowaves use much lower temperatures than classic diathermy with less lateral thermal damage and therefore causes less postoperative pain. Use of radiowaves gives an almost bloodless operating field and shortens the coagulating time.

This however, is a new technique with limited experience and the instrument is expensive.

The Hemorpex procedure

HemorPex System is a single use device which is based on the principle of dearterializing hemorrhoidopexy. This technique can be performed without anesthesia or with local anesthesia, and allows the patient to return immediately to his activities. The procedure is indicated for prolapsing types of hemorrhoids, especially 2nd and 3rd degree. The device is made of two parts. One is a fixed part, which remains in contact with the anoderm and the sensitive mucosa of the anal canal, and the second is a rotating operative part which includes the window through which the suture stitches are made on the hemorrhoid.

Doppler guided hemorrhoidal laser procedure

The HeLP™ procedure utilizes Lasers and Doppler assistance for completing the process.

First, a proctoscope is passed into the anal canal, to which is attached a disposable Doppler probe. It identifies the branches of the superior hemorrhoidal arteries above the dentate line. Then focalized laser energy is applied using the fiber handpiece to each one of the sub mucosal branches of the hemorrhoidal artery to lead to photocoagulation.

Atomizing hemorrhoids

A new technique has been described which removes hemorrhoids by atomizing. The device uses electrical current and a specialized electrical probe called the Atomizer Wand. By using the atomizer wand, the hemorrhoidal tissues are disintegrated into an aerosol of carbon and water molecules. The device excises or vaporizes one or more cell layers at a time. Once the atomizer has done its function, the

vaporized tissues are immediately vacuumed. However, no concrete data is available on this approach to hemorrhoid treatment.

Conclusions

There are numerous forms of treatment for hemorrhoids. Conservative therapy with suppositories and stool softeners is usually effective. However, many patients still come to surgery and it is always a matter of opinion as to decide on one or more of the several methods of active treatment. Many new surgical and nonsurgical approaches to the treatment of hemorrhoids have been described: sclerotherapy, rubber band ligation, cryosurgery, radiowaves, infrared photocoagulation, bipolar diathermy, and electrocoagulation. The one that is most effective depends on the size and degree of hemorrhoids, but certainly depends more on the experience of each proctologist. In the modern times, the trend is to resort to, fast and painless procedures that can be carried out in the office practice under local anesthesia.

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Day surgery for cholelithiasis: comparative study of Laproscopic cholecystectomy Vs mini-cholecystectomy

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Abstract

Open cholecystectomy through a small incision is called mini cholecystectomy. Minimally invasive techniques in surgical treatment of gall bladder disease include laproscopic cholecystectomy and minicholecystectomy. Minicholecystectomy can be an alternative to laproscopic cholecystectomy in day surgery.

Patients selected for day care surgery were assigned either group on random basis. Observations were regarding operative time, difficult gall bladder surgery, conversion to open cholecystectomy, bile spillage, drainage in operative field and postoperative hospital stay.

It is concluded that mini cholecystectomy is a safe, even in patients with medical problems, less postoperative complications and cost effective as compared to lap cholecystectomy in day care surgery.

Introduction

Soon after its introduction, laproscopic cholecystectomy was considered the method of choice for treatment of gall stones and an early consensus conference concluded that it might confer economic advantages over open surgery.¹ Single blind randomized controlled trials have indicated that convalescence differences between minicholecystectomy and laproscopic cholecystectomy are small.² From another report, no significant differences were observed between minicholecystectomy and laproscopic cholecystectomy in terms of patients opinion of general well being, abdominal pain and scarring, one year after surgery.^{1,2} Health care costs are lower after minicholecystectomy than after laproscopic cholecystectomy.² Both surgeries can be done as one day surgery.

Against this background a comparative study of minicholecystectomy and laproscopic Cholecystectomy was done. The patients were assigned on random basis, the groups of minicholecystectomy or lap cholecystectomy. Patients with acute cholecystitis, pancreatitis and CBD stone were excluded from this study.

After investigations on outpatient basis, preanesthetic

checkup was done and the patients were admitted in surgical ward. The patients were assigned on random basis, operation of minicholecystectomy or laproscopic cholecystectomy. Both minicholecystectomy and lap cholecystectomy were compatible with routine surgical procedures. A total of 150 patients were operated in either group.

Aim: Study was carried with the aim of training of residents, cost effectiveness and short hospital stay.

Patient and methods:

This study was conducted at PGIMS, Rohtak. The preoperative assessment included routine investigation. Liver function test, HbsAg and Hcv were done in all patients. The diagnosis of cholelithiasis was made with ultrasonography; Single or multiple stones, contracted or distended gall bladder, thickness of wall of gall bladder, wall echo complex, large stone in Hartman's pouch, acute or sub acute cholecystitis, size of CBD, chledocholithiasis. Investigations and preanaesthetic check up were done on outpatient basis. The patients were assigned on random basis the surgery of minicholecystectomy or laparoscopic cholecystectomy. Both minicholecystectomy and laparoscopic cholecystectomy were compatible with routine

surgical procedures. A total of 150 patients were operated in either group.

PGIMS, Rohtak provides both peripheral and central services. So, the workload is more and it is not possible to assign only laparoscopic cholecystectomy for all patients. Minicholecystectomy may present a cost and time efficient approach. General anesthesia was used in both groups. A sand bag was placed under spine at level of Liver. A transverse or sub costal muscle cutting incision of 4 to 7 cm length is used. Generally a cystic duct first method is used. After dissection of cystic duct it is ligated with 2-0 silk or ligaclips. Then cystic artery is dissected and ligated. The gall bladder is dissected from liver using electro cautery. Haemostasis is achieved. Local anesthesia using 1% Bupivacaine is infiltrated into muscles and skin. The wound is closed in layers using vicryl 1-0. The skin is closed using skin staplers.

Laparoscopic cholecystectomy was done using standard technique. Carboxy peritoneum was used. Four ports technique was used. Two 10mm and 5mm ports are used. Calots triangle first dissection is used. Liga clips are used for cystic duct and artery ligation. Electro cautery is used dissection.

Results

The mean operative time for minicholecystectomy was 20 minutes ranging 10-45 minutes. AGE & SEX: were comparable in both groups. The mean operative time for laparoscopic cholecystectomy was 60 minutes ranging from 45-120 minutes. In both groups, difficult gall bladder was described as when there were dense adhesions, contracted calots triangle, wall echo complex and rare anatomical variants. The difficult gall bladder was found in total of 15 patients, 5 in minicholecystectomy group and 10 in laparoscopic cholecystectomy group.

Table I- Operative and post-operative parameters

Incision length	4-6
Operation time	47.7 min
Peritoneal drainage	30
Nasogastric suction	7hrs
Postopanalgesics	2-8 days
Posthospital stay	4 days
Return to work	14 days

Table II- Operative finding

No adhesions	20
Minimal adhesions	10
Dense adhesions	7
Obliterate calots triangle	4
Contracted gall bladder	4
Mucocele empyema	7
Dilated CBD in situ	2
Free floating gall bladder	2

Two patients in each blood group having dense adhesions or contracted gall bladder, long cystic duct was left ligating gall bladder at neck. This prevented any injury to CBD. No CBD exploration was carried as patients having wide CBD OR stone in CBD were subjected to MRCP and were excluded from study. There was no injury to CBD, so CBD was not operated in any patient in any group. The incision was increased to more than 10 cm in 3 patients in minicholecystectomy group. It was converted to open cholecystectomy in 8 patients in laparoscopic cholecystectomy. The common causes of conversion included adhesions, empyema, anatomical variations. Hemorrhage led to conversion in 2 patients in laparoscopic cholecystectomy. The bile spillage occurred from neck of gall bladder or hepatic surface of gall bladder in only 1 patient in minicholecystectomy group. It occurred in 9 patients in laparoscopic cholecystectomy group. The tube drain was placed in these patients in both groups. Stone spillage occurred in 6 patients in laparoscopic cholecystectomy group. Only one injection of inj. diclofenac was given to each patient in post operative period. None of the patients demanded more analgesia. Nasogastric suction was not required in any of patient in both groups. All patients returned to work within a week.

Stay in hours	MC	LC
24 hrs.	60	40
48 Hrs.	12	30
>48 hrs	3	5

Discussion

Big surgeons make big incisions. The way to hell is paved with small incisions I do not enter through windows, I enter through doors. These dicta have lost their essence in present era of minimum invasive surgery. Now patients want less discomfort, short hospital stay, best cosmetics and less expenditure. Minicholecystectomy can be offered to a symptomatic gall bladder and high risk old age patients. No special equipment or training is required laparoscopic cholecystectomy needs both special equipment and training. Carboxy peritoneum is dangerous in geriatric patients with COPD. The main advantage of using minicholecystectomy is its general applicability. In laparoscopic cholecystectomy conversion rate is more and old patients have more morbidity.

The limited exposure to open cholecystectomy which is essential as pre training to laparoscopic cholecystectomy, creates a dilemma for training of residents. Minicholecystectomy helps to meet the needs patients with growth of work overload. Minicholecystectomy is best for geriatric patients.

Minicholecystectomy is an attractive alternative to laparoscopic cholecystectomy in one day care surgery. Minicholecystectomy is cost effective. Patients demanding laparoscopic cholecystectomy are quite different in terms of social and financial status.

Conclusions

Minicholecystectomy is compatible with short hospital stay, evidence based gall bladder surgery, cost effective and training of surgical residents. Minicholecystectomy is an attractive surgical procedure with well established superiorities irrespective of enthusiasm for laparoscopic cholecystectomy.

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Post Anaesthesia Care & Management in Ambulatory Surgery

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Introduction

Innovative anaesthetic & surgical techniques and escalating healthcare costs, have resulted in an ever increasing number of surgical procedures being performed on a day case basis.

Most of the procedures performed in day care surgeries are associated with comparatively less surgical trauma, so discharge of these patients depends mainly on successful recovery from anesthesia with minimal postoperative squeals. Anesthetic techniques used in ambulatory surgeries ranges from local infiltration and sedation to general anesthesia.

Requirements for making Day Care Surgeries more successful

- Patient selection(ASA 1, 2 and well controlled ASA 3)
- Plan for surgery and anesthesia techniques
- Proper preoperative preparation
- Minimal intraoperative risk
- Reduced postoperative complications
- Discharge of patient with complete instructions to avoid complications.

Here , post anesthesia care , complications, their prevention and management will be discussed.

The most important is patients shouldn't leave operating room unless they have a stable and potent airway, have adequate ventilation and oxygenation, and are hemodynamic ally stable. Once anaesthesiologist is satisfied patient is shifted out to post anaesthesia care unit (PACU) or pre discharge area in day care surgeries where he's closely observed till the major effects of anaesthesia are judged to have worn off and patient is ready to go home.

Post Operative Care

Level of postoperative care a patient will require in ambulatory surgery is determined by

- Preoperative history
- Underlying medical illness
- Intraoperative factors
- Surgical procedure
- Types of anaesthetics and drugs used

- Estimated blood loss
- Unexpected intraoperative surgical or anaesthetic event
- Intraoperative vital signs and lab findings

All these factors should be properly analyzed and PACU staff should be informed in detail about patient's status. Theses team work efforts of surgeon, anesthetist and PACU nursing staff helps in minimizing the untoward complications. Minimum monitoring equipments needed in PACU are: pulse oximetry (spo2), noninvasive blood pressure monitoring (NIBP), ECG, suction equipment.

Common Post Operative Complication:

- .. Pain
- .. Persistent sedation
- .. Nausea & vomiting
- .. Shivering
- .. Cardiovascular complications
- .. Pulmonary complications
- .. Aspiration
- .. Metabolic complications

Pain

An unpleasant experience and one of the most common surgical cause necessitating the prolonged stay in the hospital.

Management of post op pain relieves suffering and leads to early mobilization, shortens hospital stay, reduces hospital costs and increases patient satisfaction.

Pain control regimes should be tailored according to the needs of individual patient taking into account medical, physiological and psychological condition; age ; level of anxiety; surgical procedure; response to the agent given.

Harmful effects of under treated pain

- .. RESPIRATORY : Reduced lung volumes(TV,FRC), cough and atelectasis
- .. CVS : Tachycardia, hypertension, reduced myocardial O2 consumption, DVT

Pain assesment

Visual scoring					
Visual scoring Patient	No pain	A little pain	Considerable pain	A lot of pain	Worse possible pain
Observer scoring Nurse	Appears pain free	Appears comfortable except on moving	Appears uncomfortable and in pain	Appears distressed but can be comforted	Appears very distressed

- .. GIT : Reduced gastric and bowel mobility
- .. GU : Urinary retention
- .. CNS : Anxiety, fear , fatigue
- .. ENDOCRINE : Vagal inhibition, increased adrenergic activity
- .. IMMUNOLOGICAL: Infection, delayed wound healing.

Management: Systemic or Regional

Systemic analgesia:

- .. Local analgesia technique : wound irrigation, infiltration or nerve blocks(preemptive analgesia) with local anesthetics
- .. Paracetamol and NSAIDS administered at the appropriate time to achieve maximal postop effect.
- .. Weak opioids such as tramadol or codeine products
- .. Stronger opioids in small incremental doses if pain relief is not achieved with weaker ones.

Regional analgesia

- .. Single shot techniques : nerve blocks.
- .. Continuous : patient controlled analgesia or continuous infusion at preset rate.

Balanced analgesia in day case surgery commonly involves intra operative administration of short acting opioids such as fentanyl, and wound infiltration with local anaesthetic at the end of surgery supplemented in the postoperative period by an oral, non opioid analgesic. Recent improvements in our pharmacological knowledge concerning pain medication have made it possible to provide more individualized pain treatment for adults and children.

Persistant Sedation

Patient Factors contributing to persistent sedation are : Anesthetic drugs and dosage ,Female gender , Elderly patient

Duration of surgery and Individual response.

Nausea and Vomiting

Etiology of postoperative nausea and vomiting

- The patient (motion sickness, women, children)
- Perioperative drugs (opioids)
- Anaesthetic agents
- Site of operation (abdominal procedures, middle-ear surgery, laparoscopic surgery)
- Duration of surgery
- Gastric dilatation
- Intraoperative or postoperative hypoxemia
- Hypotension

Shivering:

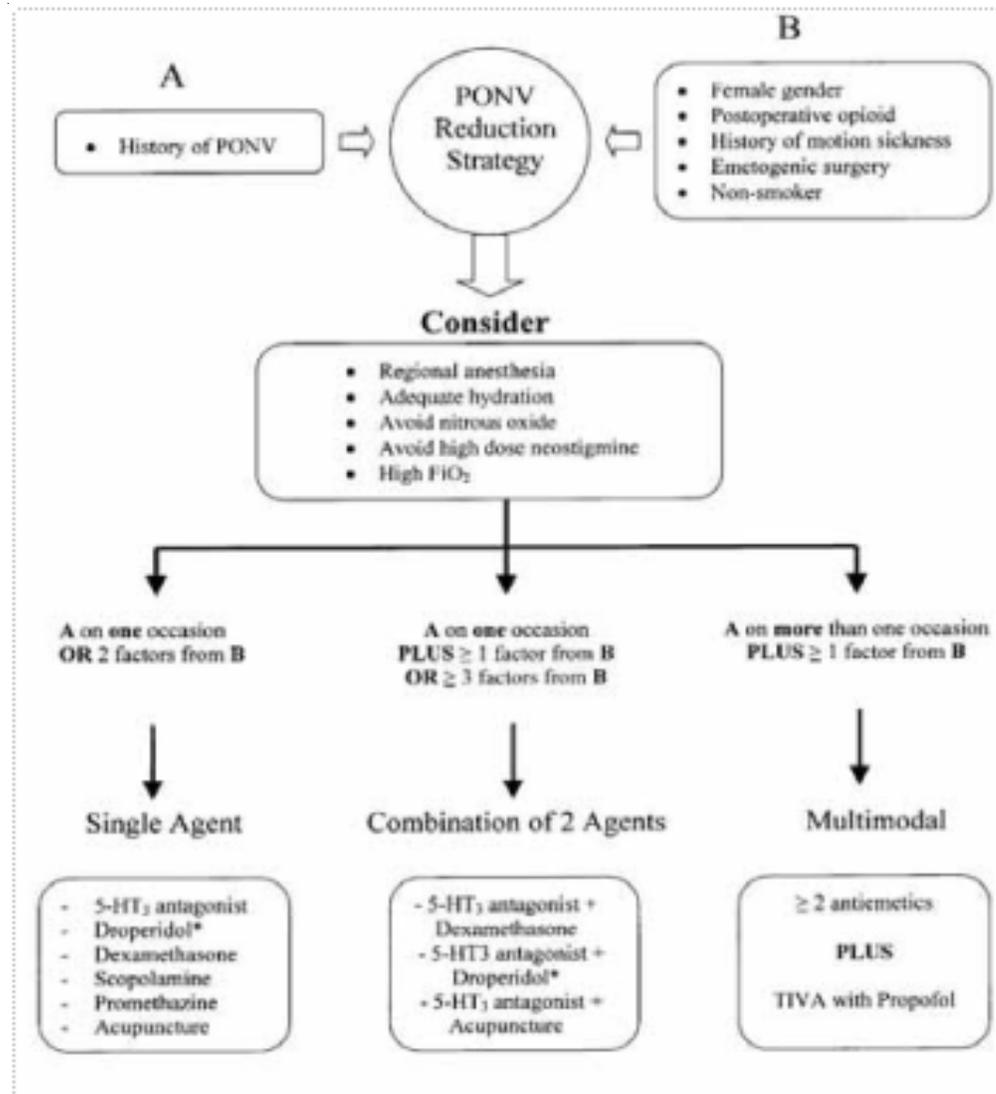
Cause: perioperative hypothermia, hypoxia, perioperative heat loss, early recovery of spinal reflex activity, sympathetic overactivity etc.

Management : reduce heat loss, intravenous fluid rewarming and medical treatment : opiates, tramadol and ondansetron, alpha 2 adrenergic agonists(clonidine, dexmedetomidine).

Cardiovascular Complications

- .. Postoperative hypotension : 20-30% decrease in BP from preoperative levels that results in symptoms of organ hypo perfusion. TREATMENT : assess intravascular fluid requirement, rule out any underlying cardiac dysfunction.
- .. Postoperative hypertension : 20- 30% increase in BP from preoperative levels. TREATMENT : Avoid stress, control with beta adrenergic blockers, calcium channel blockers.
- .. Arrhythmias : residual effects of anesthetic agents, increased sympathetic nervous system activity,

Management of PONV (Post Op. Nausea & Vomiting)



other metabolic abnormalities and preexisting cardiac or pulmonary disease can lead to arrhythmias.

Respiratory Complications

- .. Inadequate postoperative ventilation
- .. Respiratory depression
- .. Arterial hypoxemia
- .. Airway obstruction

Management: treat the underlying cause, supplement oxygen but, marked hypoventilation may require controlled ventilation.

Aspiration:

- .. Inhalation of gastric acidic contents(pH< 2.5) in the perioperative period can lead to hypoxemia.
- .. It is an emergency situation... oxygen is supplemented. Tracheal intubation and suction if required should be done.
- .. Antibiotics are prescribed only if bacterial infection

develops.

Renal Complications

- .. Oliguria : if urine output <0.5ml/kg/hr adequate perfusion pressure and hydration should be maintained.
- .. Polyuria : most commonly due to fluid overload or osmotic diuresis

Discharge Criteria after Ambulatory Surgery:

- Vital signs must have been stable for at least 1 h
- The patient must be Oriented to person, place, and time
- Able to retain orally administered fluids
- Able to void
- Able to dress
- Able to walk without assistance
- The patient must not have more than minimal

nausea and vomiting , excessive pain and bleeding.

- The patient must be discharged by both the person who administered anaesthesia and the person who performed surgery. Written instructions for the postoperative period at home, including a contact place and person, must be reinforced.
- The patient must have a responsible, “vested” adult escort them home and stay with them at home.
- Home readiness does not mean that the patient is able to make important decisions, to drive, or to return to work. These activities require complete psychomotor recovery which takes 24-72 hrs.

Conclusion:

Ambulatory surgery is very safe, with a low frequency of complications. However, potential risks and complications are associated with any surgical procedure, no matter how minor. Some risks are related to the surgery, and other risks are related to the anaesthesia but if both the surgeons and anaesthetist will work together as a team , many of these complications can be prevented and others if happen can be treated successfully.

Three stitch Inguinal hernia Meshplasty under local anaesthesia : Ambulatory surgery

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Abstract

Posterior wall strengthening is essential part of inguinal hernia repair. Polypropylene mesh is used in majority of inguinal meshplasties. Combined ilioinguinal nerve block and local infiltration of Lignocaine 1% is anaesthesia of choice for meshplasty in inguinal hernia as ambulatory surgery. In this three stitch technique, only three polypropylene sutures are used to anchor the mesh to inguinal ligament near pubic tubercle, on conjoined tendon medially and external oblique muscle lateral to deep inguinal ring. In this study 200 patients were operated for inguinal hernia with this technique as ambulatory surgery. The operative time was about 15 minutes. The cost of surgery is much reduced. The patients were ambulatory in three hours. They were discharged and allowed to go home in evening. Complications like pain and urinary retention were uncommon but lead to extended hospital stay. Wound infection, heamatoma and oedema occurred in a few patients in post-operative period. It is concluded that technique of three stitch meshplasty under local anaesthesia is a simple, fast and cost effective for ambulatory surgery.

Introduction

The lichenstein technique of meshplasty has pioneered the ambulatory surgery for inguinal hernia repair.¹ The high failure rate and long rest advised in tissue repairs have almost abandoned these repairs. Meshplasty, a tension free repair, is now standard method of inguinal hernia repair. The two methods of mesh fixation, which are commonly used, are multiple polypropylene sutures and skin staplers.² The standard way of securing the mesh in position on the posterior wall of inguinal canal is with polypropylene sutures.³ To save the operative time and proper fixation of the mesh is the main purpose.³ Spinal or general anaesthesia is used for meshplasty in inguinal hernia repair. Local anaesthesia using lignocaine is also being used. Local anaesthesia is not only cost effective, also produces adequate anaesthesia for inguinal hernia repair. The patient need short hospital stay and can be discharged in hours only.

Aim of study

The present study was conducted to evaluate a modified technique of lichenstein inguinal hernia repair under local anaesthesia in ambulatory surgery. Also to study the three

stitch anchoring of mesh as a simple technique, easy to learn, less operative time, with short hospital stay and having minimum post operative complications.

The study group

The study was carried out in department of surgery at PGIMS, ROHTAK from 2008 to 2011. A total of 200 cases were operated under local anaesthesia as day surgery or ambulatory surgery. The patients were investigated on outpatient basis. They were called on morning of surgery with overnight fasting. A written consent was taken that the patient will be operated under local anaesthesia and meshplasty will be done for inguinal hernia. These patients will be discharged in the evening of surgery day. All patients at age of 16 years to 85 years suffering from unilateral or bilateral hernia were entered into the study.

Inclusion criteria- Patients with unilateral and bilateral hernia which were non obstructive fully or partially reducible were included in study.

Exclusion criteria- Patients with obstructed strangulated and recurrent hernia were excluded from the study.

All patients were advised biochemical test like complete haemogram, Blood sugar, Blood urea, X-ray chest and ECG.

The clearance for surgery was obtained from anaesthetist. Patients with chronic obstructive airway disease, coronary artery disease, congestive heart failure and disorder of spine, arthritis were also operated.

Technique

All patients received one gram of injection Cefotaxim half an hour before surgery. Local anaesthesia used was 1% lignocaine without adrenaline. Local anaesthesia used ilioinguinal nerve block and local infiltration of skin and subcutaneous tissue. Cord block is given after opening the inguinal canal.

In majority of cases the volume of 1% Lignocaine used was 15-20ml.

Skin incision was made 1.5cm above and parallel to the medial half of inguinal ligament. Skin and subcutaneous tissue were incised till the glistening fibres of external oblique aponeurosis were seen. The inguinal canal was opened in the direction of fibres of external oblique aponeurosis. The lateral crus of the superficial inguinal ligament was cut. The two flaps of the external oblique aponeurosis were raised by blunt dissection in order to produce space for mesh fixation. With index finger the testicular cord was lifted. Now, the direct hernia can be separated from the cord. It can be confirmed by asking the patient to cough. In case of indirect hernia, the covering of the testicular cord, the external spermatic fascia and cremasteric muscle are incised in direction of muscle fibres. The hernial sac is separated from pampiniform plexus and vas deferens. Herniotomy is performed in case of indirect hernia. In direct hernia, the sac is not opened. A purse string sutures is applied in fascia transversalis. The hernia sac is inverted by tying purse string suture and plication of transversalis fascia. The polypropylene mesh is tailored according to size of inguinal canal so that at least 1.5cm remains beyond three anchoring sutures. One suture is applied medially near the pubic tubercle to the inguinal ligament. Second suture is applied medially to the conjoint tendon as now it forms the anterior rectus sheath. A triangle of mesh of side 1cm approximately is tailored, about 1.5 cm from lateral margin. Third suture is applied to the muscle fibres of external oblique. The testicular cord and ilioinguinal

nerve are placed in the inguinal canal. The external oblique sheath is closed with 2-0 prolene suture. Skin is closed using staples.

The patient is observed in recovery room for pain, haematoma and urinary retention. The patient is allowed orally a cup of tea and biscuits and discharged after three to four hours. In patients with extra ordinary pain, scrotal oedema and haematoma the stay was extended for one day. The patients were discharged to take antibiotics and analgesics as advised. The patients were explained to take rest at home and in case of any emergency report to the indoor. The patients were followed on weekly basis in outpatient department for three weeks and then at three months interval. In follow up record was kept about pain return to routine activities and early post operative complications. Most of the patients were followed upto one year for any complication or recurrence.

Results

All the 200 patients reported were males. The mean age of the study group was 40 years ranging from 18 to 85 years. Patients having unilateral and bilateral hernias were included in the study. right side was common i.e. about 70%, left side was 25% and bilateral 5%. Ratio of direct and indirect hernia was 70 and 30 % respectively.

All the patients were operated under local anesthesia 1% xylocaine. Volume of xylocaine used varying from 15 ml to 30 ml. In majority of patients 20 ml was used. Only 30 % needed i.v. tramadol during the surgery. The duration of surgery varying from 10 to 30 minutes. Mean time was 20 ± 10 minutes. All the patients were operated under local anesthesia as day surgery. The operative finding of indirect hernia was noted in 150 patients and direct sac was noted in 45 patient and pantaloon hernia was noted in 5 patients. In three cases of direct hernia sliding hernia was present having colon and bladder wall as content. In post operative period 175 patients were discharged in the evening in 3 to 6 hours. In 20 patients the stay was extended for 24 hours. In rest of 5 patients, the stay was further extended for 72 hours because of some complication. Hte mean duration of the pain was 48 hours, which was relieved in most of the patients with oral analgesics. A few patients needed inj. Diclofinac in immediate post operative period. Most of the patients returned to routine activity after 72 hours. Hard work was taken up by patients after 3 weeks. Post operative course was smooth in most of the patients. The complications were as follows:

Complication	No. Of Patients
Wound infection	2
Scrotal swelling	3
Mesh infection	0
Neuralgia	0
Recurrence	0

Follow up was done on weekly basis for three weeks and then at 3months interval for 1 year. There were only a few drop outs in follow up. The cost of mesh and sutures used was approximately 1000 rupees combined.

Discussion

The standard way of securing a mesh on the posterior wall of inguinal canal is with multiple polypropylene sutures. There are other ways like use of skin staplers and tuckers. Some surgeons have used no stitches and just placing a mesh in the inguinal canal. The three stich method to anchor the mesh in the posterior wall of inguinal canal is technically easy, rapid and provides adequate stability to the mesh. Garg CP et al³ in a comparative study using skin staplers and polypropylene sutures for securing the mesh in the lichenstein's tension free inguinal hernia repair observed that this technique of mesh fixation has added advantage of significant reduction in operative time.

This technique of mesh fixation is comparable to use of skin staplers by various authors.^{4,5} In other studies local anesthesia is of choice as compared to spinal and general anesthesia.⁶ In our study only a few patients needed intramuscular analgesia post operatively. The royal college of surgeons of England has suggested that to qualify or day case surgery, patients should not require parenteral analgesia after discharge.⁷ The implications of day care surgery and early ambulation are considerable. There are no differences in pain duration in our study as compared to other studies.^{3,8} Patients in our study were discharged in 3 to 6 hours. Most of the patients returned to routine activities early. Early return to work decreases the burden on hospital and society in terms of manpower and cost. These results are comparable to other studies of day care surgery. The main complications were wound infection, seroma and swelling of scrotum.

There were no cases of neuroma or entrapment neuropathy leading to intractable pain. There were no recurrences in our study.

This technique of tension free mesh plasty under local anesthesia for ambulatory surgery is being used by others.⁹

Conclusion

This technique of meshplasty is simple, relatively easy to learn as compared to tissue repairs. The three stich method is a different way of securing the polypropylene mesh in a secured way to pubic tubercle and external oblique muscle. The study demonstrates that this technique of mesh fixation is as effective as conventional fixation with polypropylene sutures has advantage of being faster, cost effective, reduced postoperative complications and early ambulation.

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One Day Surgery: Mother of all surgeries.

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Abstract:

A retrospective analysis of Stand-alone (Free Standing), Multispecialty, dedicated Day Surgery Centre (DSC), in a Metropolitan City, was done over a period of 3 years, from July 2008 to June 2011. Every patient operated in the study had undergone pre-operative counseling and was aware that they will be admitted as a Day Case. Number of patient operated were:, mean average stay was 8 hrs., number of re-admissions / overnight stay were:.

Introduction:

Whenever there is mention of Day Surgery, we think of minor procedures. Major Ambulatory surgery as One day case, are a challenge in itself. The dynamics of surgical management starts from the patient approaching you for the first consultation. Usually, he is resigned to the fact that there is no escape from the surgeon's knife, but, always hoping that some new technological advancement would deliver him from the inevitable. It then slowly dawns on him, during the course of the consultation, that though there is no escape from surgery, there are newer advances in surgical science, which can make sure that he is home on the same day of surgery. Going into the depth of this advancement, enables us to conclude that, indeed, One Day Surgery is mother of all surgeries.

Material and Methods:

A 3 year study from July 2008 to June 2011 was undertaken at a dedicated DSC in a Metropolitan city of Mumbai. This being a Stand-alone centre, with multispecialty secondary surgical care being provided to select cases. Protocols established by The Indian Association of Day Surgery were used for the case selection, patient preparation and discharge.

Each patient underwent pre-operative counseling, therefore, willing to undergo Surgery as Day case, knowing well that they will be discharged by the evening, if they fulfill the Discharge protocol.

Cases selected were from the specialty of General Surgery, Urology, Plastic Surgery, ENT and Gynecology. Cases selected were divided into OPD, Day Care and Extended

stay category.

Numbers of surgeries are detailed in Table 1.

Table 1:

Year	Total no. of cases
2008-9	572
2009-10	1009
2010-11	1385

Distribution according to Category are detailed in Table 2.

Table 2:

Category	Total no. of cases
OPD	532
Day Care	1269
Extended Stay	1165

Surgeries which come under the Major class have been analyzed and segregated specialty-wise. Most commonly performed surgeries as Day Care, have been listed in Table 3.

Table 3:

Specialty	No. of cases
General Surgery	1231
Plastic Surgery	194
Urology	176
ENT surgery	33
Gynaecology	583
Paed. Surgery	260
Ortho./Onco.	17

Protocols used:**1. Patient selection:**

- Age: more than 6 months old.
- Medically fit and stable patients {ASA I, II, III (well controlled)}.
- Well motivated and psychologically / mentally stable.
- Toilet, transport, telephone and responsible relation at home.
- Body mass index > 35.

2. Patient preparation:

- Examination & diagnosis.
- Investigations (Haemogram, Bl. Sugar, HIV, HBsAg, Urine, Stool, X-ray Chest, ECG; USG, Liver & Kidney function-if indicated).
- Medical fitness (Physician/ Cardiologist/ Diabetologist/ Anaesthesiologist).
- Overnight fasting.
- Bowel preparation (Laxatives, enemas)
- Advise regarding pre-op. Medications (Inj.Tetanus Toxoid, Anti Hypertensive, to stop Aspirin at least 2 days before surgery).

3. for Discharge:

- The patient is fully conscious.
- Haemodynamically stable.
- No giddiness on standing.
- Able to walk without support.
- Tolerating orally without vomiting.
- No or minimal pain.
- Passed urine.
- Responsible person is present to take the patient home.
- No surgical complications.

Results:

The mean average stay in each category was found to be as:

OPD:	15 min. (+/- 10 min.)
Day Care:	8 Hrs. (+/- 2 hrs.)
Extended stay:	23 hrs. (+/- 10 hrs.)

ISO 9001:2008 was used for standardization of Protocols and followed stringently, noting short comings and correcting as and when required.

Patient feed-back forms were used to complete Patient satisfaction levels, on analysis, no complaints were received.

Complications:

No complications, in the form of readmission or extending the stay of a patient was recorded.

All the patients were discharged on the scheduled day and time.

We looked for: Bleeding from operated site, Excessive nausea and vomiting, Excessive drowsiness, Retention of urine, Haemodynamic instability. None were found in any of our patients. Therefore, did not hamper discharge.

Discussion:

One Day Surgery Center-Babulnath Hospital, is a Stand-alone / Free standing, Multispecialty, Day Surgery Center, catering mostly to Ambulatory surgery patients.

Set Protocols have been followed at this center for Case selection, Preparation, Discharge and follow-up. (1)

We follow the true concept of Day Care Surgery, like world over, which is of providing patients high quality, affordable, surgeries, with an added benefit of early resumption of work, therefore, reducing the cost of treatment, as well as saving time. In our country too, in a study conducted in a government hospital, up to 50% of reduction in the cost of surgical care has been shown by the use of Day Care Surgery. (2)

A surgical Day Case is a patient who is admitted for an operation on a planned non-resident basis and who nonetheless, requires facilities for recovery. The whole procedure should not require an overnight stay in hospital bed. (3)

Success of any Day Surgery is the efficiency of its staff and willingness to work fast and in a clock work precision. The orientation is towards the patient and their wellbeing. Convenience of the patient is kept uppermost at every stage of the process of hospitalization.

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& WHO.

Information to Contributors

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