

The Indian Association of Day Surgery:

President:

Dr. T. Naresh Row General Surgery Mumbai

Imm. Past Pres.:

Dr. M. M. Begani General Surgery Mumbai

Vice-President:

Dr. Kishore Adyanthaya Paediatric Surgery Mumbai

General Secretary:

Dr. Nisha Khushalani Dental Speciality Mumbai

Joint Secretary:

Dr. M. Nand Kumar General Surgeon Chennai

Dr. Bhavinder Arora General Surgery Rohtak

Dr. V. S Aundhkar ENT Mumbai

Treasurer:

Dr.Paras Jain Anaesthesiologist Mumbai

Executive Members:

Dr. Roshan Kumar B. N. Orthopaedic Sur Bengaluru

Dr. Rustom Ginwalla Plastic Surgery Mumbai

Dr. Seema Dande Gynaecology Nagpur

Dr. Rangalaxmi S. Anaesthesia Bengaluru

Dr. K. Ramesh General Surgery Warangal

Dr. D. U. Pathak General Surgeon Jabalpur

Senior Advisers:

Dr. T. R. Row Plastic Surgery Nagpur

Dr. S. M. Bose General Surgery Chandigar

Dr. Anant Joshi Orthopaedic Surg. Mumbai

Dr. S. N. Agarwal Obst. & Gynac. Mumbai

Patrons:

Dr. Keki Mehta Ophthalmology Mumbai

Dr. H. K. Sanchati Orthopaedics Pune

Dr. D. D. Gaur Urology Mumbai

Dr. R.D. Bapat General Surgery Mumbai

Dr. P. B. Pai- Dhungat Obst. & Gynac. Mumbai

Editorial Board:

Chairman: Dr. D. D. Gaur **Co-chairman:** Dr. Anil Parakh

Editor: Dr. T. Naresh Row

Advisory Board:

Dr. R. D. Bapat Dr. P. B. Pai-Dhungat
Dr. Kieki Mehta Dr. Rahul Shroff
Dr. Kishore Adyanthaya Dr. Reena Wani
Dr. Sangeet Gawhale

Correspondence:

For submission of manuscripts, advertisements, subscription and other enquires:

Dr. T. Naresh Row,

Editor, Day Surgery Journal of India,
95, Lady Ratan Tata Medical Centre,
Cooperage, Mumbai-400 021
Maharashtra State, India.
Tel.: 91 22 22828290.

The committee welcomes articles on all matters related to day surgery, for consideration for publication. We disclaim any responsibility or liability made, and opinions expressed by authors or claims made by Advertisers; they are not necessarily the opinion of The Indian Association of Day Surgery. No part of this publications may be reproduced without prior written agreement of the publisher.

Subscription:

The Journal is published once a year. Rs.100/-

Advertisement:

Back Cover :Rs. 25,000/- (Coloured)
Inside Front/Back :Rs. 15,000/- (Coloured)
Full Page :Rs. 10,000/- (Black & white)

(Front Cover Design by: Dr. T. Naresh Row)

Contents:

Editorial	5
1. Feasibility and safety of Day Care Laparoscopic Cholecystectomy in a Day Care Center . <i>Rawlani S.</i>	7
3. Retrograde Intra-renal Surgery (RIRS) <i>Bansal M. B..</i>	10
4. Excision & Primary Closure of Pilonidal Sinus as Day Case. <i>Row T. N.</i>	12
5. Diabetic foot and Wound management as Day Case <i>Row T. N.</i>	18
6. Information to Contributors.	22

EDITORIAL

Innovations are the way forward in modern times. Unless we become more and more innovative and think out of the box, we will not really progress.

This issue of the Day Surgery Journal carries such innovative ideas, which were put to use and succeeded.

Dr. Santosh Rawlani, a Surgeon from Nashik, has once again showed what a young and energetic mind can achieve. Laparoscopic Cholecystectomy is a Day procedure in most parts of the world, soon, it will be a norm in our country too.

R. G. Stone Clinics have progressed to Day Surgery, due to sheer energy and progressive thinking of Dr. Bansal, both, senior and junior. With multiple centres in India, they have taken the concept of Day Surgery to a different level. To my mind, other than Ophthalmology, the maximum innovation in technology has been in Urology, specially, Endo-urology. From Open surgeries to LASER and Robotic surgery, Urology is fast evolving into Minimal Access and hence, to Day Surgery.

My own articles, on Pionidal Sinus, which is a simple procedure, requiring skill and courage to face recurrences. It is only over a period of time that you can reach near-perfection. Diabetic foot, is rewarding when you see the results of your hard work, but discouraging when you see the patients financial condition. A desire to make Diabetic foot treatment more affordable, we have innovated to Day Surgery. A simple analysis with a lot to desire, in the form of research, is published to invite constructive criticism and innovative thinking.

Happy reading!

- T. Naresh Row

Feasibility and safety of Day Care laparoscopic cholecystectomy in a Day Care Center

Rawlani S.

Consultant Laparoscopic Surgeon.

Corrospondence:

Santosh Day Care Surgery Centre, Nashik, M.S., India

Keywords- Post Operative Nausea and Vomiting, Laparoscopic Cholecystectomy, Day-case

To cite this article:

Rawlani S., Feasibility and safety of Day Care Laparoscopic Cholecystectomy. Day Surg J India. 2017.13:7-10.

Paper received: Feb. 2017. **Accepted:** March 2017. **Source of support:** Nil.

Background: Laparoscopic cholecystectomy has become the gold standard for treatment of symptomatic gallstone disease because of faster recovery, less postoperative pain, earlier return to work and better cosmesis (1). Although Day Care Laparoscopic Cholecystectomy (DCLC) has been shown to be safe in centers with adequate infrastructure for Day Care Surgery, however its feasibility and safety in developing countries has been less studied.

Aim: The purpose of this study was to evaluate the feasibility and safety of elective Laparoscopic Cholecystectomy performed as a Day Care procedure in our Santosh Day Care Center.

Patients and methods: Forty patients of benign gall bladder pathologies, with no signs & symptoms of acute cholecystitis, normal liver function tests, aged less than 65 years, who were graded I and II on the American Society of Anesthesiologists physical status score, irrespective of their educational status, living within 60 km, were selected for DCLC. Laparoscopic cholecystectomies were performed under general anesthesia using four port technique. Patients were admitted and operated on in the morning hours and discharged 8-10 hours later. For the purpose of this study, we defined the following criteria as pre-requisites for same-day discharge after 8-10 hours of monitoring in the DS ward: ability to tolerate oral feeds; ability to pass urine spontaneously; and ability to ambulate independently. Follow up was done by patients calling the hospital the morning after surgery.

Results: Forty laparoscopic cholecystectomies were performed from January 2015 to Feb 2017. No significant peri-operative complications were noted. Altogether 20 (50%) were discharged within ten hours of surgery. The reasons for failure to discharge on same day evening were the the hour was too late for discharge in 10 (25%) and presence of complaints of nausea and post-operative moderate pain in 10 (25%). There were no readmissions in my study. All forty patients (100%) were discharged within 24 hours of surgery.

Conclusion: These results suggest that laparoscopic cholecystectomy can be routinely performed as a day-case procedure.

Introduction:

Day care surgery is defined as ambulatory surgery, wherein, the operated patient recovers from surgery and is fit to return home within a day (24 hours).

Day care surgery allows a person to return home on the same day that a surgical procedure is performed. In an overnight stay unit (23-hour admission unit), operated patients are observed overnight but discharged next morning, within 23 hours of surgery. This course overcomes the arbitrary limit to reimbursement as an outpatient

procedure.

DCLC is safe, feasible, and has potential benefits for health care delivery in developing countries. Each surgical service needs to develop their own guidelines based on local patient demography. This study describes the process of developing DCLC in a day care surgery center with in-patient facility and its successful integration into the regular surgical services of the hospital.

Materials and Methods

A prospective, nonrandomized study was conducted at Santosh Day Care Surgery

Centre, Nashik during a period of 26 months, from January 2015 to Feb 2017. Forty consecutive patients with a symptomatic gall stone disease were included in the study. Criteria for case selection were patients who were non-toxic with no signs & symptoms of acute cholecystitis, normal liver function tests, medically fit and stable {ASA I & II}, well motivated, psychologically / mentally stable patients, accompanied by competent and responsible relative or care taker were selected in the study. Patients with gall bladder lump and perforation were excluded from the study. Patients with clinical suspicion of common bile duct stones and previous abdominal surgery were excluded.

Pre-surgical work- up included a physical examination in OPD, liver biological tests, (Alkaline Phosphatase, Transaminases), Ultrasonography of the Gallbladder and the Bile ducts and an anesthetic evaluation. Patients with an American Society of Anesthesiology (ASA) classification of I or II were considered eligible for Day Care Laparoscopic Cholecystectomy.

Details regarding the Day Care procedure and anesthesia were explained to the patient. Written informed consent was obtained from all the patients. All the patients were admitted early morning and operated in day hours and tried for same day discharge. All the patients underwent Laparoscopic Cholecystectomy under general anesthesia. A standard anesthetic, analgesic and antiemetic protocol was used. The protocol included premedication with Ondansetron and Dexona as emetic agents and Midazolam as sedative and anxiolytic agent. Induction was done by Glycopyrrolate I.V., and Fentanyl (3micro gm /kg) I.V., and Propofol (1-1.5 mg/kg) I.V. Relaxation was rendered by Atracurium (0.3-0.5 mg/kg) I.V. Maintenance was done with O₂, air and Isoflurane. Regular monitoring of hemodynamic parameters including pulse rate, blood pressure, oxygen saturation, and Cardiac Monitoring was done. ETCO₂ was monitored. Surgical approach included standard four port technique; 0.5% bupivacaine was used to infiltrate port sites before incision. Routine drainage was not used; a tube drain was inserted when indicated.

Patients were observed in a common recovery room. Parenteral diclofenac, paracetamol or ondansetron were used whenever indicated. Patients were assessed for pain, nausea, and vomiting. They were encouraged to sit up, drink as soon as possible, and to go to the toilet under supervision. Intensity of postoperative pain was recorded on the Numeric Pain Rating Scale. The patients were asked to make pain ratings corresponding to current, best and worst pain experienced during the hospital stay period. Ratings of pain intensity were 0 for no pain, 1 to 3 for mild pain, 4 to 6 for moderate pain and 7 to 10 for severe pain.

Criteria for discharge:

- (a) Stable vital parameters
- (b) No new signs or symptoms after the surgery.
- (c) No nausea or vomiting
- (d) Mild tolerable pain.
- (e) Passed urine
- (f) No surgical complication
- (g) Able to walk comfortably without assistance.
- (h) A responsible escort.

Overnight stay was considered in cases where recovery was not proper, patient had complications like excessive pain or vomiting, or the hour was too late in evening, and social issues (issue of transport or family not willing to go home).

All patients were provided a set of instructions regarding diet, activity, medication and wound care. Patients were asked to report in case of excessive pain, nausea / vomiting, constipation/ diarrhoea, distension of abdomen, and discharge or redness at port sites.

Duration of surgery, length of stay after surgery, post discharge visit, readmission and complications were collated. Family physician was involved whenever possible. Patient was followed up on tenth postoperative day to remove the sutures and a follow-up interview was recorded.

Patients were discharged if they were stable, fully conscious and if: (1) No problem was anticipated during the operation. (2) There was minimal nausea or vomiting. (3) Pain was controlled or minimal. (4) Patients were able to go to the toilet without much difficulty (located about 25 metres from the recovery room). (5) Patients were able to dress themselves. (6) Patients were confident about going home. Patients not satisfying any of the above criteria were admitted.

Before discharge, all patients were given 50 mg Diclofenac intravenously and were prescribed oral analgesic and antibiotic tablets to be used on a regular basis for 5 days and then used only if required. Telephone numbers of the day center and the consultant were provided. It was mandatory for the patient (or their care provider at home) to ring the Day center / Consultant at home the next morning at a predetermined time to give a status report. Patients were reviewed at ten days. In the absence of any problems, patients were discharged from follow up. A patient satisfaction questionnaire was filled for all patients.

OBSERVATIONS AND RESULTS

A total of 40 patients were planned for Day Care Laparoscopic Cholecystectomy during the 26 months period. There were 26 men and 14 women, with a mean age of 44 (range 13-65) years. The maximum number of patients reported in the age group 40-50 yrs.

Indications for surgery in these patients were recurrent biliary colic in (70%) and previous episodes of acute cholecystitis in (30%). There were no conversions to open cholecystectomy. Mean operative time for LC only was 90±15.1 SD min. There were no intra-operative complications.

There were no significant post-operative complications except for pain and nausea. 25 percent (10/40) patients had nausea and moderate post operative pain and received ondansetron and single dose of paracetamol/ diclofenac during postoperative stay. These patients were admitted overnight due to persistent moderate postoperative pain. 25 % patients stayed overnight as the hour was too late in evening to discharge. All these patients (20) patients were discharged the next day morning.

All 40 patients with uncomplicated symptomatic gall bladder diseases were found eligible for discharge and were discharged within 24 hours of surgery.

There were no re-admissions in my study. Our criteria for discharge are therefore, satisfactory; the discharge parameters, based on published criteria, also appear to be reliable.

All the patients were followed up on tenth postoperative day and sutures/staples were removed. During follow-up all patients complained of mild pain (Score 1-3 Numeric rating scale) for 2 days. All patients returned to full routine activities within 7 days.

All the patients were happy about early discharge. All patients were satisfied with the information given and aftercare provided. All would recommend it to a friend or relative and would undergo the procedure as a day case again. No patient was re-admitted on a later date after successful DCLC.

Discussion

DCLC offers many advantages as compared with inpatient LC. It allows the patient to recuperate at home and reduce hospitalisation cost. In the case of elective laparoscopic cholecystectomy, the morbidity has been reported to be between 2 and 4%, but the incidence of major complications requiring urgent operative management is much lower (0.15 to 0.6% for bile duct injury and less than 0.05% for arterial bleeding). Additionally, pilot studies have demonstrated a 4 to 6 hours observation interval to be sufficient to detect early complications (2). Bile duct injuries are most often detected during surgery or become symptomatic only several days after laparoscopic cholecystectomy (3). Day case LC was advocated to have a high success rate of 95% in selected patients.

A crucial aspect in the development of safe day case surgery program is the criteria for patient's selection in the study. Many authors have suggested that careful patient selection helps to increase the success rate of DCLC (4,5). Patients who have an anesthetic preoperative classification of ASA grade I or II, with no previous abdominal surgery, no recent history of acute cholecystitis and a procedural duration of shorter than 90 min are suitable candidates for day care laparoscopic cholecystectomy. (6) I followed the same and this resulted in successful adaptation of DCLC in 100% of patients.

In my study, readmission rate was zero. This was possible due to proper case selection of patients. The results of my study confirmed that patients with age less than 65 years, ASA class 2 or below, and uncomplicated gallstones and disorders were suitable for Day Care Laparoscopic Cholecystectomy.

Success rate of same day discharge (50%), of 24 hour discharge (100%) and re-admission rate (0%) in our

study are comparable to that of other studies which performed DCLC or ambulatory LS (7,8), with a success rate of 86%-95% and re-admission rate of 1.5%-8%.

The control of pain is crucial for the provision of good Day-case anaesthesia. Good post-operative analgesia requires planning and a multimodal approach (9). Appropriate analgesia protocol is essential for successful discharge in Day care surgery. Intraperitoneal instillation of 0.5% Bupivacaine and its local infiltration at sites of port entry provides adequate postoperative analgesia and minimizes the need of other analgesic support (10,11). Paracetamol, Diclofenac and Bupivacaine were used in above study. 75% of the patients had mild tolerable pain which was controlled by analgesics successfully. 10 (25%) patients complained of moderate post-operative pain for initial 8 -10 hours. There is a trend away from opioid analgesics as they are associated with PONV (post operative nausea and vomiting) that results in patient dissatisfaction and delays discharge. Oral/parenteral analgesics have a higher success.

Methods used to prevent nausea include avoiding the use of volatile anesthetic agents and the under use of opiates in the postoperative period. Use of Ondansetron and Dexamethasone in pre-induction of anaesthesia minimizes the symptoms of postoperative nausea effectively (14). Ondansetron was chosen as effective in reducing postoperative nausea or vomiting (12).

Overnight stay is usually a joint decision made by the surgeon, the patient, and his attendants. As patient has to participate in self-care after discharge, their comfort, preference, and safety need to be considered in the assessment for discharge. In the above study, 20 patients stayed overnight because the hour was too late for discharge in 10 (25%) and medical reasons 10 (25%). In the study of M. Zubair et al, out of 113 patients undergoing DCLC, 14 (12.39%) patients stayed overnight due to moderate pain and nausea/vomiting (4.43%), placement of drain in 4 (3.54%) and conversion to open in 3 (2.65%) cases. There were no re-admissions.

Among the agents available in India, Propofol and Isoflurane have increased the ability of the anesthesiology to provide a successful Day case experience. Because of the rapid onset and offset of these agents longer cases can be planned on an ambulatory basis and patients can recover quickly and can be discharged home safely. Side effects such as the "hang-over effect" can be minimized. Propofol has the additional effect of reducing PONV (Post-Operative Nausea and Vomiting (13).

Postoperative nausea, vomiting (PONV) and pain are the frequent reasons for overnight stay after ambulatory LC (15). Optimal control of postoperative pain, nausea or vomiting is pivotal to enhancing the outcome of day case LC.

The findings of my study regarding the effectiveness of Laparoscopic cholecystectomy as Day Care procedure are consistent with previous researches. My study demonstrated that Day Care Laparoscopic Cholecystectomy is safe with high success rate in carefully selected patients with uncomplicated benign gall bladder pathologies and has the advantages of cost effectiveness.

Conclusion

Day Care Laparoscopic Cholecystectomy under General Anesthesia is feasible and safe and can be practiced in uncomplicated symptomatic cases of benign gall bladder pathologies. Patients find it acceptable and it appears safe.

References:

1. Begos D G, Moodlin I M. Laparoscopic Cholecystectomy: From gimmicks to gold standard. *J Clin Gastroenterol* 1994; 19(4): 325-30.
2. Critchlow JT, Paugh LM. Is 24-hour observation necessary after elective laparoscopic cholecystectomy? *South Med J* 1999;92:1089-92.
3. Brooks DC, Becker JM, Conners PJ, Carr-Locke DL. Management of bile leaks following laparoscopic cholecystectomy. *Surg Endosc* 1993;7:292-5.
- 4 Ammori BJ, Davides D, Vezakia A, et al. Day case laparoscopic cholecystectomy: a prospective evaluation of a 6-year experience. *J Hepatobiliary Pancreat Surg* 2003; 10:303-8.
5. Vuilleumier H, Halkic N. Laparoscopic cholecystectomy as a day surgery procedure: implementation and audit of 136 consecutive cases in a university hospital. *World J Surg* 2004; 28:737-40.
6. Voyles CR, Berch BR. Selection criteria for laparoscopic cholecystectomy in an ambulatory care setting. *Surg Endosc* 1997;11:1145-6.
7. Chok KS, Yuen WK, Lau H, Lee F, Fan ST. Outpatient laparoscopic cholecystectomy in Hong Kong Chinese - an outcome analysis. *Asian J Surg* 2004; 27:313-6.
8. Ammori BJ, Davides D, Vezakia A, et al. Day case laparoscopic cholecystectomy: a prospective evaluation of a 6-year experience. *J Hepatobiliary Pancreat Surg* 2003; 10:303-8.
9. Kehlet H, Dahl JB. The value of "Multimodal" or "balanced analgesia" in postoperative pain treatment. *Anesthesia & Analgesia* 1993;77.5:1048-56.
10. Narchi P, Benhamou D, Fenandez H. Intraperitoneal local anaesthetic for shoulder pain after day care laparoscopy. *The Lancet* 1991;338:1569-70.
11. Alexander DJ, Ngoi SS, Lee L, So J, Mak K et al. Randomized trial of periportal and peritoneal bupivacaine for pain relief after laparoscopic cholecystectomy. *British Journal of Surgery* 1996; 83.9: 1223-25.
12. Tang J, Wang B, White PF, Watcha M F, Qi J et al. The effect of timing of ondansetron administration on its efficacy, cost-effectiveness and cost-benefit as a prophylactic anti-emetic in the ambulatory setting. *Anaesthesia & Analgesia* 1998;86.2:274-82.
13. Green G, Jonsson L. Nausea: The most important factor determining length of stay after ambulatory anesthesia. A comparative study of isoflurane and/or propofol techniques. *Acta Anaesthesiologica Scandinavica* 1993; 37.8: 742-6.
14. Wang J J, Ho ST, Liu HS, Ho CM. Prophylactic antiemetic effect of dexamethasone in women undergoing ambulatory laparoscopic surgery. *British Journal of Anaesthesia* 2000; :459-62.
15. Hollington P, Toogood GJ, Padbury RT. A prospective randomized trial of day stay only versus overnight stay laparoscopic cholecystectomy. *Aust N Z J Surg* 1999;69:841-3.
16. M. Zubair, M. J DINARWALA, ANIS HUSSAIN JAFFERY. Day care laparoscopic cholecystectomy - a feasible option. *pakistan journal of surgery*, Volume 24, Issue 3, 2008; 182-184

Retrograde Intra-Renal Surgery (RIRS)

Bansal M. B..

Consultant Urologist.

Correspondence:

RG Stone Urology and Laparoscopy Hospital, C wing, Dhananjay Appartment, Off Veera Desai Road, Near Balaji Studio, Andheri West- 400053, Mumbai, M. S., India

Keywords- Day-case Renal Surgeries. Endo Urology.

To cite this article:

Basnal M. B., Retrograde Intra-Renal Surgery (RIRS). Day Surg J India. 2017.13:12-13.

Paper received: Feb. 2017. **Accepted:** March 2017. **Source of support:** Nil.

Introduction

Endoscopic surgery using minimally invasive techniques has been the frontier of medical innovation in the last two decades. With the stress shifting towards shorter hospital stay, lower costs, improved cosmesis and earlier return to work, expanding the scope of endourology has been the natural consequence. This has been boosted further with the less than perfect results seen in cases of urolithiasis treated with extracorporeal shockwave lithotripsy (ESWL).

Advances have been in the form of newer actively deflectable instruments with better optics, improved intraureteral lithotripsy probes, improved knowledge of ureteral anatomy and clear definition of the indications for Retrograde Intra Renal Surgery (RIRS).

Definition

Surgery within the renal pelvicalyceal system and parenchyma performed using instruments introduced in the retrograde fashion through the ureter and lower urinary tract is termed Retrograde Intra Renal Surgery.

Flexible retrograde endoscopic surgery in the kidney has become possible resulting from the development of appropriate accessories for stone retrieval and fragmentation. With RIRS, a significant segment of difficult and complex cases with upper tract pathology have become routine indications for this new minimally invasive treatment.

Indications for RIRS

Diagnostic:

- Evaluation of hematuria
- Evaluation of positive upper tract cytology
- Evaluation of radiographic filling defects or obstruction

- Surveillance after conservative treatment of upper tract tumors

Therapeutic:

Stone Disease:

- Failed ESWL (stones <1.5 cm)
- RIRS assisted ESWL (stones upto 2.5 cm)
- Radiolucent stones (stones <1.5 cm)
- Concomitant renal and ureteral stones (renal stone <1 cm)
- Calyceal diverticular stones
- Stones with nephrocalcinosis
- Stones with associated anatomic obstruction
- Stones with supravescical diversion

Others:

- Treatment of PUJ obstruction
- Treatment of anastomotic structures
- Treatment of urothelial tumors

Instrumentation for RIRS

1. Newly designed flexible instrument with dual deflection
2. Energy sources (EHL, Holmium laser with small caliber probes)
3. Flexible accessories including baskets, graspers and forceps
4. Suction pump
5. Video camera unit
6. Fluoroscopy unit

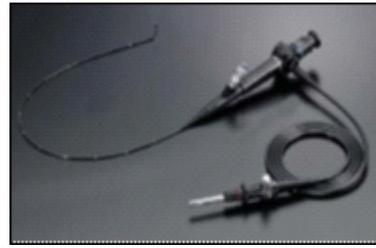
Conclusions

Flexible diagnostic ureteroscopy of the upper urinary tracts and RIRS have become an integral part of the armamentarium of the urologists. The role of the diagnostic tool is firmly established since ureteroscopy allows complete visualization of the entire renal collecting system

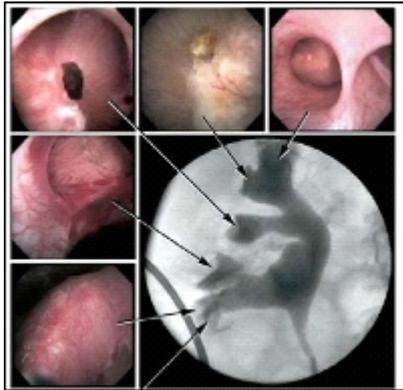
Using only the conventional modalities of diagnosis and therapy, there remains a significant subset of

patients that is incompletely evaluated and treated and often ends up requiring open surgical procedures. With the current stress on minimally invasive surgery, lower hospitalization and earlier return to work, endoscopic treatment must be explored fully before committing the patient to an open surgical procedure.

Finally, the possibility of a single stage clearance for stone disease epitomizes the idea behind minimally invasive surgery.



Flexible URS



Intra Renal View



Holmium LASER Machine

Excision and Primary closure of Pilonidal Sinus as Day Case

Row T. Naresh

Consultant General Surgeon & Day Surgery Specialist

Corrospondence:

One Day Surgery Centre, Babulnath Road, Mumbai, M. S., India

Keywords- Day Care Surgery, Pilonidal Sinus, Dye Sinogram, Excision and Primary Closure. Day Case, One Day.

To cite this article:

Row T. N., Excision & Primary closure of Pilonidal Sinus as Day Case. Day Surg J India. 2017.13:15-17.

Paper received: April 2017. **Accepted:** April 2017. **Source of support:** Nil.

Abstract:

Retrospective analysis of cases performed over a period of 10 years at a single center, specializing in Day Surgery of 112 cases, performed by single surgeon and in the same method, with a recurrence rate of 2.24%. An exponential increase in the number of cases as Day Care Surgery, added to the confidence of the surgical team and the acceptance of the procedure, in its form, by the patient. International guidelines and protocols were used.

Aims and Objective:

The aim of this study was to analyse selective cases of Pilonidal sinus, for Excision & Primary closure, as Day Surgery. Objectives were to study the feasibility of Case selection and Preparation, including counseling, to undergo the surgery by a simple technique as One Day case.

Introduction:

The origin of Pilonidal sinus has many theories. A disease which simply means a 'Nest of Hair', found in the natal cleft (Sacrococcygeal region) of young adults (1). This is because, in most cases, hair is involved in the disease pathogenesis. Many treatment modalities have been described and suggested, among which, Excision and Primary closure is well known and simple to perform.

Material and Methods:

Number of cases was 112, over a period of ten years, from May 2007 to April 2017. Sex distribution: Male: 62 patients; and Female: 50 patients. All patients were operated at One Day Surgery Center, Mumbai, India.

As has been described in several world literatures, this is a disease afflicting the young adult, men more than women, who are hairy individuals (2).

Average Age of the patients was 25 years. Ranging from the youngest patient of 20 years to oldest of 30 years of age.

Operative technique involved three steps: Excision on the Sinus, Shifting of the Natal cleft by acentric incision and Undermining a thick flap to Obliterate the Natal cleft.

Protocols followed:

Criteria used for the selection and preparation of cases which was considered to be ideal for Day-case: (3). Namely:

- 1) Criteria for Patient Selection.
- 2) Preparation included counseling of the patient and relatives.
- 3) Routine investigations.
- 4) Discharge protocol, were followed.

Operative Technique:

Involved the three major steps:

- 1) Acentric incision.
- 2) Complete excision of the Sinuses and
- 3) Obliteration of the Natal Cleft.

Anaesthesia:

Patient was placed in the Prone position with IV sedation in the form of Medazolam and Pentazocin/Fentanyl administered by the anaesthetist.

A mixture of 2% Lignocaine HCl with adrenaline (1:200,000) 20 ml, and 0.5% Bupivacaine or 0.75% of Ropivacaine, 20 ml, mixed together. A 27G an inch and a half long needle, was used to infiltrate the operative field, keeping away from the infected sinus/abscesses by at least 3-4 cm on each side.

In Prone position, buttocks were strapped apart by adhesive tape to afford good exposure. (Pic. 1.)

On table Methylene blue dye sonogram of 10 cc distilled water with 1 cc Methylene blue, and 2-3 drops of Hydrogen peroxide, pushed through the sinus opening, was done.

Acentric incision, that is, more skin taken out from one side and less on the other side, achieved by keeping close to the sinus/midline on one side and at least 2 cm away on the other side.

Complete excision of all the Sinus pits and tracks were achieved as they stood up due to the blue dye. This included the necrotic tissue as well as scar tissue.

Undermining of the thick flap, deep to the deep fascia, was undertaken, so as to allow the fat to fall back into the cavity and obliterate it.

Deep sutures of 1-0 Nylon or Ethylon were used 2 cm away from either side of the skin margin, to be later used as a Tie-on bandage. Skin was closed by 3-0 Nylon or Ethylon deep mattress sutures for skin closure. (Pic. 2.) A Tie-on bandage was used over which the loose ends of the 1-0 Nylon/Ethylone were knotted. (Pic. 3.) Compression dressing with broad elastic adhesive bandage, so as to keep the buttocks together.

Care was taken to remove the straps before starting suturing so as to get a tension free suture line.

No drain was kept. Average stay in the hospital: 8 hours. Patient is mobilized in 2 hours and oral liquids started, with ambulation in under 4 hours.

Discharge:

As per prescribed protocol, most patients were discharged within an average stay of 6 hours from the hospital. Some patient stayed up to 11 hours, but eventually, went home. No re-admission or overnight stay was seen in this series.

Follow-up:

Change of dressing was undertaken after 48 hr. Patient was allowed to walk and sit from day one. Tie-on bandage dressing was removed after 10 days, and the skin sutures after another 5 days, that is, all sutures removed after 15 days.

Long term follow-up and hair care was explained to all patients. A routine follow-up of 3 years was seen in 50% of the patients.

Results:

Recurrence rate of 2.24% was observed in this series, as there were 2 male patients who presented with discharging sinus within the first year of surgery. All patients followed the protocols set up by The Indian Association of Day Surgery. Simple Excision and Primary closure was performed on all the cases, keeping in mind the three steps described earlier. All patients were discharged as Day Surgery. There was no

readmission in this series.

Discussion:

Theoretically, the origin of Pilonidal sinus disease is debatable. But, the accepted logic is the relation of this abscess/sinus with hair. It has been seen, that patients present with hair, removed from the sinus tract, which are long and sometimes, even different from the structure and texture of the patient's hair. Apart from this, the fact that the origin of the term: 'Pilonidal', in Latin, means as 'Nest of hair'. (Pic. 4.) This probably is the most common and acceptable explanation of the disease or etiology of this disease. Based on this etiology, this was popularly known as "Jeep Bottom" disease (4).

Several Simple and Complex surgeries a have been described as a cure for this disease. Some of these are: Fistulotomy and curettage, Marsupialization, Karyadakis, Bascom's operation, Excision and primary closure, Skin grafting, Cleft closure, Flap procedures, Z-plasty, V-Y advancement flap, Rhomboid flap and Gluteus maximus myocutaneous flaps, Limburg Flap procedure (5/6).

In one series, with male predominance, a high recurrence rate of upto 42%, in which, 38% were previously operated cases, of Primary excision and suturing of Pilonidal sinus was undertaken.(7)

Concurrently, another large series of Simple excision and Primary closure showed excellent results and the researchers concluded that, the natal cleft is flattened and the incision scar and the incision line is transferred from the midline to the lateral side by performing the asymmetric excision and primary closure, and thus the essential cause of pilonidal sinus is eliminated. The procedure is simple, the complications and recurrences are very low, and it is seen to be an excellent procedure in the surgical treatment of uncomplicated pilonidal sinus disease. (8)

Further review of literature for results of different types of surgical rotation flaps revealed Karyadakis procedure, which achieves obliteration of natal cleft and shifting of the natal cleft from the center as: The hospital stay was two days for all patients. Postoperative complications were encountered in six patients (7.3 percent). Wound infection was encountered in four patients (4.9 percent), and subcutaneous fluid collections were encountered in two patients (2.4 percent). No recurrences were encountered throughout the 20 +/- 6.8 months mean follow-up duration. (9)

When we talk of reduced hospital stay and early ambulation, there was a comparative study of the three types of methodology described for treating Pilonidal sinus and the results showed that, the average hospital stays for marsupialization, primary closure and skin flaps were 2.84 +/- 0.13, 2.62 +/- 0.12 and 5.95 +/- 0.52 days, respectively. Hospital stay for the skin flaps method was longer than that for the other two methods. The average time to return to work after marsupialization was 5.42 +/- 0.08 weeks; but the time

needed to return to work after undergoing the primary closure or the skin flaps methods was much shorter: 2.15 +/- 0.05 and 2.90 +/- 0.20 weeks, respectively (P<0.001). There was no difference in wound infection rate (P = 1.000) or recurrence rates. Concluding that since there was not much difference in the recurrence and complication rate, the simplest method and shortest hospital stay should be the criteria for choosing a particular type of surgery for Pilonidal Sinus. (10)

Conclusion:

Day Surgery Pilonidal Sinus is a simple procedure which can be followed by keeping in mind the Three major steps of Surgery and Protocols of case selection, preparation and discharge. Excision and Primary closure is a simple procedure with comparative results and low recurrence rate, thus, ideal for One Day Surgery in a specialized center.

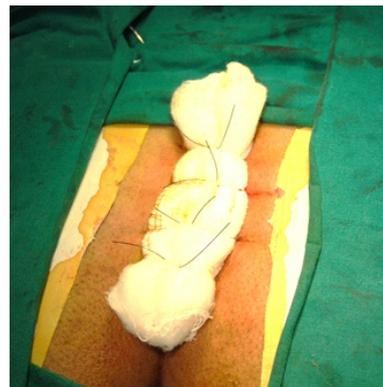
References:

1. Hodges RM, Pilo-nidal Sinus, Boston Med. Surg J, 1880; 103:485-6.
2. Guyuron B, Dinner MI, Dowden RV, Excision and Grafting in treatment of recurrent pilonidal sinus disease.

- Gurg Gynecol Obstet 1983; 156:201-4.
3. Row T. Naresh, Handbook for Day Care Surgery, published and released in 2016.
4. Buie LA. Jeep Disease (pilonidal disease of mechanized warfare). South Med. J 1994; 37:103-9.
5. Hull TL, Wu J. Pilonidal disease. Surg Clin N Am 82 (2000): 1169-1185.
6. Reconstructive surgical therapy of infected pilonidal sinus. Hegele A1, Strombach FJ, Schönbach F. Chirurg. 2003 Aug;74(8):749-52.
7. Primary midline closure after excision of a pilonidal sinus is associated with a high recurrence rate. Iesalnieks I1, Fürst A, Rentsch M, Jauch KW. Chirurg. 2003 May;74(5):461-8.
8. Simple and effective surgical treatment of pilonidal sinus: asymmetric excision and primary closure using suction drain and subcuticular skin closure. Akinci OF1, Coskun A, Uzunköy A. Dis Colon Rectum. 2000 May;43(5):701-6; discussion 706-7.
9. Results of the lateral advancing flap operation (modified Karydakis procedure) for the management of pilonidal sinus disease. Bessa SS1. Dis Colon Rectum. 2007 Nov;50(11):1935-40. Epub 2007 Sep 8.
10. Comparison of three methods in surgical treatment of pilonidal disease. Aydede H1, Erhan Y, Sakarya A, Kumkumoglu Y. ANZ J Surg. 2001 Jun;71(6):362-4.



Pic. 1: Strapping of buttocks.



Pic. 3: Tie-on bandage



Pic. 2: Sutures.



Pic. 4: Specimen.

Diabetic foot and Wound management as Day Case

Row T. Naresh

Consultant General Surgeon & Day Surgery Specialist

Correspondence:

One Day Surgery Centre, Babulnath Road, Mumbai, M. S., India

Keywords- Day Care, Diabetic foot, Diabetic foot Syndrome, Diabetic Ulcer, Ambulatory Surgery.

To cite this article:

Row T. N., Diabetic foot and Wound management as Day Case. Day Surg J India. 2017.13:18-21.

Paper received: April 2017. **Accepted:** April 2017. **Source of support:** Nil.

Aim & Objective:

To show that treatment of Diabetic foot disease as Day Case is a possibility in selected cases.

Introduction:

Diabetic foot is a disease which invariably lands up in a limb amputation. To save a limb, it requires time, money and patience. It is the passion of a surgeon that enables him to save a diabetic gangrenous limb. By the time a patient reaches the surgeon, it is after exhaustion of their resources, with very little left for the surgeon to do other than amputate, the easier way out.

A diabetic foot is a foot that exhibits any pathology that results directly from diabetes mellitus or complication of diabetes mellitus. Presence of several characteristic pathologies is called diabetic foot syndrome. (1)

The most serious foot complications in diabetes are: (2)

- Diabetic foot ulceration. It occurs in 15% of all patients with diabetes and precedes 84% of all diabetes-related lower leg amputations.
- Diabetic foot infections.
- Neuropathic osteoarthropathy.

The Centre works on Manuals and Standard Operative created specifically for Day Surgery and are ISO 9001-2008 compliant with Day Surgery Protocols in place. Complications were explained to the patient along with post procedure instructions. Regular follow up was recommended. Patient were managed by physician-diabetologist, and among other parameters, blood sugar levels were kept under control.

Material and Methods:

Data collected over 10 years, from May 2007 to April 2017, were analysed retrospectively. Procedures carried out at One Day Surgery Centre, a

Multi-speciality Day Surgery Centre in Mumbai. Total number of cases were 319.

Patients of diabetic gangrene of different stages and patients requiring secondary suturing and skin grafting were tabulated. 100 patients required hospitalisation and 219 were treated as Day Case.

Out of Day Surgery cases, 121 patients required desloughing and debridement of non-healing ulcers on different parts of the body with different sizes (ranging between 1cm to 6 cm in diameter). 33 patients required secondary suturing, 41 patients underwent skin grafting, and the rest, 47 patients, healed by secondary intention, in this group.

Finger/Toe Amputation was done for 98 patients, with primary closure or secondary suturing. Ranging from Great toe to little toe, terminal to middle phalanx.

Below knee amputation was performed on 5 patients.

Not taken into consideration is the Depth, Place and Position of the ulcer/wound.

Case selection: ASA 2-3, with reasonably controlled Blood sugar levels, along with well controlled co-morbidities, were accepted. Patients requiring extensive monitoring and ICU/Hospital care were not included. Most importantly, patients who were not ambulatory, and required wheel chair or assistance for mobilisation, were hospitalised.

Cardiac assessment, including a 2-D Echo test with consultation of a Cardiologist was carried out.

Nephrologist was consulted and patients requiring Renal Dialysis on alternate days, were managed on OPD basis.

It was understood that the patients presenting with diabetic foot have long standing medical ailments other than Diabetes mellitus, like hypertension and

IHD. Associated sequel to DM like severe paraesthesia and compromised vascularity, which works to our advantage, in these patients.

Routine work up included Fasting and Post-Meal Sugar levels, Complete Blood Count, Glycosylated Hb levels, X-ray of the effected foot, ECG/2-D Echo, X-ray Chest and Renal Functions. Involvement of associated Nephropathy would require a Nephrologist Opinion. Otherwise, Diabetologist/Physician is consulted for sugar control. All consultations are done on an OPD basis. A slide chart of insulin was given to the patient and explained as to how to titre the Blood Sugar levels.

Most of the patients presented with insufficiency of the terminal vessels, both, arterial as well as venous. Which were documented by Colour Doppler Test. If there was an obstruction or narrowing at a higher level, then a Vascular Surgeons opinion was taken.

In most cases coming to our centre, were categorised between Stage 3 and 5 of King's Simple Staging System for diabetic foot (3). There are several other Classifications suggested like Wagner's and University of Texas, which can be used for staging and describing the Diabetic ulcer and wounds.

There was varied degree of loss of sensation in all the patients, with some complaining of burning in the sole and hyperaesthesia.

Operative procedures: Almost all patients afflicted below knee and ankle, were operated under local blocks, along with sedation. Blocks consisted of Nerve blocks, Ring blocks and Infiltrative anaesthesia. Anaesthetic agents for local infiltration used were 2% Lignocaine HCl, mixed with equal quantity of 0.5% Bupivacaine or 0.75% Ropivacaine. This mixture was injected using a 27G needle of 1 and half inch length.

In apprehensive patients, mild sedation in the form of Medazolam/Pentazocin or Fentanyl, was used. General anaesthesia or Spinal anaesthesia was reserved for selected case, especially for patients requiring Below Knee amputation.

Split Skin Grafts could also be harvested under local infiltration, from the lateral aspect of the thigh using a dermatome or Full thickness graft from the abdominal fold. (Pic. 1 & 2)

Osteomyelitis required complete excision of the bone without amputation of the digit. Amputation of the Toe or finger was performed only if the skin was completely gangrenous or impending Gangrene/Abscess. (Pic. 3, 4, 5, & 6)

Desloughing and Debridement was undertaken, followed by curetting the wound before haemostatic dressing. (Pic. 7 & 8)

Caution is to be paid in patients using blood thinners. Though the dose of these blood thinner medications is within the therapeutic levels, in some cases, if not stopped

3 to 4 days prior to surgical procedure, can lead to profuse bleeding and haematomas. Individual discretion is advised.

Dressing: Most post operation dressing is performed after 48 hours. Except in cases where skin grafting has been done. In these patients, a delay of 4 to 5 days is acceptable.

Every dressing of a diabetic wound is like a minor surgery. Recommendation is to sit down comfortably, near the wound that needs dressing, under adequate light, with the finest forceps and scissors, and patiently, pick out each infective material that you can see. Other than this, simple dressing with Povidon Iodine of 5% strength with a few drops of Hydrogen Peroxide, is recommended. Excessive Hydrogen peroxide on healthy granulation is to be avoided.

Among the various creams and gels available, Nano-crystalline Silver impregnated gels have shown to give excellent wound healing in most wounds. Initially, daily dressing is recommended, then, depending on the status of the wound and progress of healing, time period between dressings can be increased.

Hyperbaric O₂ / Ozone therapy: An ideal method of dealing with infection and hastening healing by promoting angiogenesis and granulation, Hyperbaric O₂ therapy is not easily available or contraindicated in most cases. These chambers are full sized, that is, patient has to be in the pressure chamber. Much study and work has been done on this modality of treatment and is considered an adjuvant to prevailing modes of treatment.

Ozone Therapy works on the principle of splitting O₂ into Ozone and is given locally to the limb through a tube connected into a plastic bag, which covers the limb and the wound area. This treatment is much simpler, easier accepted, less expensive and better complaint for the patient. But, still a lot of studies and research need to be scientifically undertaken to make this method a norm.

Results:

Out of 319 patients treated with varied afflictions of Diabetic foot disease, 219 were treated on a Day Case basis, making it 68.65% of the total cases handled at the Centre.

Out of the 219 cases treated as Day Case, 121 required debridement only, that is 55.2%; 98 patients had undergone Finger/Toe amputations, that is, 44.8%.

Of the 121 patients who were treated, the results were as follows: 47 (38.8%) by Secondary indention (Pic. 9 & 10); 33 (27.2%) by Secondary suturing and 41 (33.88%) by Skin grafting.

5 (1.56%) cases had to be referred for below knee amputation, of the total 319 cases.

The time taken for the wounds to heal were varied, between 10 to 60 days, sometimes more.

Discussion:

Wounds of the foot are the most common reason for diabetes-related hospital admissions. In many of these cases, surgical intervention is the best option.⁴

Most patient suffer from chronic wounds like non-healing ulcers, which can be managed as an Out Patient. Because of loss of sensation and poor blood supply, they are easily operated upon and discharged without the fear of post-operative pain or bleeding. In fact, in most cases, there is no requirement for any form of anaesthesia or sedation.

It is estimated that 15% to 20% of patients with diabetes will develop an ulcer on their foot at some point, (5) and for many of these cases, the most appropriate treatment results in some form of surgery.

McNeely et al (6) found that a transcutaneous oxygen tension (TcPO₂) of less than 30 mmHg, absence of the Achilles' tendon reflex, and foot insensitivity are 3 factors that are strong predictors of ulceration.

The pathogenesis of ulceration is complex and involves the interaction of angiopathy, neuropathy, and immunopathy. Briefly, vascular impairment has been found to correlate with the development of diabetic foot ulcers, (7) probably through ischemic skin changes leading to ulceration.

The relationship between diabetic neuropathy, the insensitive foot, and foot ulceration was recognized by Pryce, a British surgeon, over a century ago. He stated that, "It was abundantly evident that the actual cause of the perforating ulcer was peripheral nerve degeneration and that diabetes itself played an active part in the causation of the perforating ulcer" (8).

Neuropathy is the most significant risk factor for diabetic foot ulcers and is present in over 80% of patients with diabetes and foot lesions. (9)(10) All aspects of nerve function including the motor fibres to the intrinsic muscles of the foot are affected.

Not much work has been done on Ambulatory Diabetic foot treatment. Bed rest and non-pressure bearing foot wear is the norm and recommended in most cases. We have to re-think these conventional methods.

With the advent of Vac dressings, Stem cell impregnated wound dressing and Micro-Current therapy, home care or at least Ambulatory care needs more encouragement for lessening the burden and inconvenience to the patient and their relatives.

Simple emphasis on 'Home-Care' was given to all patients, which included, daily foot examination; less obstacles at home, so as to prevent injury; a good foot wear; exercises for better circulation; avoid smoking; reduce alcohol intake; and good sugar control.

Conclusion:

Feasibility of treating Diabetic foot disease as Day Care, is

a possibility, which needs serious consideration. Holistic approach, proper case selection and counseling, along with following of the principles of surgery, meticulously, provides the basis to success in treatment of Diabetic foot syndrome.

Reference:

1. Boulton in Diabetes, 30;36 2002.
2. Palumbo PJ, Melton LJ. Peripheral vascular disease and diabetes. In: Harris MI, HammanRF, editor. Diabetes in America. Washington: US Govt Printing Office; 1985. Pp. 16-21. NIH Pub. 85-1468.
3. Simple Staging System for Diabetic foot, Kings College Hospital, London.
4. Surgical Management of the Diabetic Foot. Wayne J. Caputo, DPM, FACFAS. Wounds. 2008;20(3):74-83.
5. Boulton AJ, Vileikyte L, Ragnarson-Tennvall G, Apelqvist J. The global burden of diabetic foot disease. Lancet. 2005;366(9498):1719-1724.
6. McNeely MJ, Boyko EJ, Ahroni JH, et al. The independent contributions of diabetic neuropathy and vasculopathy in foot ulceration. How great are the risks? Diabetes Care. 1995;18(2):216-219.
7. Delbridge L, Appleberg M, Reeve TS. Factors associated with development of foot lesions in the diabetic. Surgery. 1983;93(1 Pt 1):78-82.
8. Pryce TD: A case of perforating ulcers of both feet associated with diabetes and ataxic symptoms. Lancet. 1887; 11:11-2.
9. Pecoraro RE, Reiber GE, Burgess EM. Pathways to diabetic limb amputation. Basis for prevention. Diabetes Care. 1990;13(5):513-521.
10. Edmonds ME. Experience in a multidisciplinary diabetic foot clinic. In: Connor H, Boulton AJM, Ward JD, eds. The Foot in Diabetes: Proceedings of the First National Conference on the Diabetic Foot, Malvern, England, May 1986. Chichester, England: John Wiley; 1987:121-134.



Pic 1 & 2: Skin Graft.



Pic. 3, 4, 5, & 6: Amputation of Toe with primary closure.



Pic. 7 & 8: Desloughing.



Pic. 9 & 10: Healing by Secondary intention.

Information to Contributors

Day Surgery Journal of India, publishes Original Articles, Case Reports, Reviews, New Surgical techniques, Letters to Editor, Research Papers etc., related to Day Surgery, in its broad term, manuscript submitted for publication, are to be accompanied with a letter stating the status of the manuscript, that is, the paper is / not Published or under publication or submitted for publication in any other journal. Articles based on papers presented at conferences should mention as such. Abstract / Papers are accepted subject to Editorial Boards preview. Papers published become the property of the journal under copy right and may be reproduced only with written Permission from the Editor and duly acknowledged.

Manuscripts can be sent as E-mail attachment and followed by a copy by post.

Title page: Title, names of author (s) with initials, Department(s) of origin, designation of the authors and address of author for correspondence and short title.

Abstract: Not exceeding 100-200 words stating the main problem and conclusion with keywords at the end if desired.

Main text with subtitles: Introduction, Material & Methods, Results, Case Reports, Observations, Discussion, Summary, Conclusion.

References: Acknowledgment, Citations in the text are to be super-scribed by number or in parenthesis at top, serially in the order in which they are first mentioned. Author names need not be included. Repeated reference gets the same serial number on top. Authors must verify the references with original documents. References are typed on a separate sheet in the same serial order. Vancouver system is to be followed.

Papers: Name(s) and initials, of all authors, full title of the paper; Journal name abbreviated as in Index Medicus, year, volume number, first and last Page numbers.

Books: Names of authors with initials, title of the chapter in quotes, title of the book, name of "Editors" with initials, edition number and name of publishers, place and year, page numbers first and last. Reference to Official Publications & Reports of Governments, WHO, etc., should indicate the name of the agency, title of publication, volume number and page number if any, country, month, year of publication and place. Reference to citation from Abstracts should be followed by language of original publication, number of the abstract, name of the abstracting journal, month and year of publication.

Reference to manuscripts accepted but not yet published should be indicated by the name of the journal and added "in press" parenthesis. Paper submitted for publication but not yet accepted should not be listed but noted in the text itself as '(unpublished)'.

Figures: Three separate sets of sharp, glossy, black and white photographic prints with the letters and figures sufficiently large to stand reduction to suitable size for reading, when printed, should be submitted well protected against bending in transit. Indicate in pencil on the back of each figure the name of the first author, short title of the paper, figure number and an arrow to indicate 'top' position. Clinical photos scan pictures, X-rays are accepted but their number is restricted to minimum. Colour photos will be printed only on prior payment by author. Legends for figures should be typed separately with the figure number, complete without necessity to refer to text again.

Tables: Tables are separately typed double spaced with the title and legend on its top. Metric system should be followed through out. Statistical analysis should indicate the method followed. Pages of manuscript should be numbered on right top commencing from title page to the last sheet. Approximate position of the Figures and tables may be marked in the margin.