brace the concept because of perceived problems with post-operative pain management and bleeding.

It was in 1973, that Rivkin and Reznik published their paper on ambulatory proctology surgery. The rediscovery, improvement and broadening of outpatient resources and utilities occurred during the last three decades, and now it has been estimated that 90% of ano-rectal cases may be suitable for ambulatory surgery. A wide variety of ano-rectal conditions including anal fissures, hemorrhoids, anal fistula, pilonidal sinus, condylomata, abscesses and other miscellaneous conditions have been shown to be amenable to surgery on an outpatient basis.

Despite the social, economic and medical advantages reported by various authors, majority of surgeons are loath to utilize it, either because difficulty in ensuring adequate pain control, or for fear of postoperative complications. Many times patients themselves are reluctant to give consent for day care surgery for lack of knowledge about safety, feasibility and advantages of such surgeries. Other possible reason could be the lower payment made by the health insurance plan on an erroneous assumption that outpatient surgeries were minor and low risk procedures.

In this paper we report results of our experience in surgery for various proctological pathologies conducted on an outpatient basis during the last 8 years. The purpose of this study was to assess patient’s response to the ambulatory surgery dedicated to proctology.

**Abstract.** – Objective: To evaluate the results of proctological surgeries carried out by us on an outpatient basis. Design: Retrospective study. Subject: 3256 patients with benign ano-rectal pathologies needing surgical intervention. 

**Materials and Methods:** Patient demographics, type of anesthesia used, the type of operation and postoperative complications are described. Patient satisfaction was assessed independently after surgical procedure.

**Results:** Mean age of the patients was 37.5 years. 61% patients were male. There was no mortality. The mean duration of hospital stay was 8.4 hours (range 3-22 hours). Complication rate was 2.9%, 81.4% patients were highly satisfied with the procedure.

**Conclusion:** Day care proctological procedures are a safe and effective way of reducing costs without increasing morbidity, mortality, and is acceptable to majority of patients.

**Key Words:** Ambulatory, Day care, Proctology, Patient satisfaction.

**Introduction**

Ambulatory surgery or day care surgery is a clinical admission for a surgical procedure, with discharge of the patient on the same working day.

Ambulatory surgery encompasses those surgical interventions that are more complex than office-based procedures performed under local anesthesia but less complex than major procedures requiring at least an overnight stay.

The potential benefits of ambulatory surgery include more rapid return to the comforts of a home environment, diminished opportunities for nosocomial complications and diminished cost.

Though increasing numbers of surgical procedures were performed as day cases, the colorectal surgical practice has been slow to embrace the concept because of perceived problems with post-operative pain management and bleeding.

It was in 1973, that Rivkin and Reznik published their paper on ambulatory proctology surgery. The rediscovery, improvement and broadening of outpatient resources and utilities occurred during the last three decades, and now it has been estimated that 90% of ano-rectal cases may be suitable for ambulatory surgery. A wide variety of ano-rectal conditions including anal fissures, hemorrhoids, anal fistula, pilonidal sinus, condylomata, abscesses and other miscellaneous conditions have been shown to be amenable to surgery on an outpatient basis.

Despite the social, economic and medical advantages reported by various authors, majority of surgeons are loath to utilize it, either because difficulty in ensuring adequate pain control, or for fear of postoperative complications. Many times patients themselves are reluctant to give consent for day care surgery for lack of knowledge about safety, feasibility and advantages of such surgeries. Other possible reason could be the lower payment made by the health insurance plan on an erroneous assumption that outpatient surgeries were minor and low risk procedures.

In this paper we report results of our experience in surgery for various proctological pathologies conducted on an outpatient basis during the last 8 years. The purpose of this study was to assess patient’s response to the ambulatory surgery dedicated to proctology.

**Materials and Methods**

We reviewed the records of all the patients who underwent ano-rectal procedures in our ambulatory unit between June 1997 and July 2005. Data was collected on age of patients, sex, asso-
associated illness, preoperative evaluation; type of anesthesia used and treatment provided.

The cases that were excluded from this study included minor procedures performed during consultation such as endoscopies, infra red or radiofrequency coagulation of hemorrhoids or their band ligations, evacuation of perianal hematomas or hemorrhoidal thrombectomies, and all major procedures such as extensive rectal surgeries that required long hospital stay.

Patients who satisfied the following criteria were selected for outpatient proctology surgery:

1. Patients having good control on systemic diseases like hypertension, diabetes or ischemic heart disease.
2. Patients corresponding to ASA I and II levels (ASA, American Society of Anesthesiology). Medically stable ASA III patients following consultation with the anesthetist concerned.
3. Those who were on anticoagulant therapy on having discontinued the same a week prior to the procedure.
4. An informed willingness to undergo the procedure and an ability to faithfully follow post discharge instructions.
5. Patients accompanied by a responsible person to take him home and to attend on him at least for next 48 hours.
6. Assurance of active participation of family members in postoperative care.
7. Patients having easy access to toilet and telephone in the postoperative dwelling.
8. Availability of quick transport in case of emergency or complications.
9. The patients remaining within one-hour reach of appropriate medical help until the following morning after discharge.

Our protocol includes admission in the morning of the operation and preoperative evaluation by means of ECG, coagulation profile, and blood glucose estimation. The patient, prepared with a dose of Polyethylene glycol on the prior night, is taken in the operative room where a venous line is placed and the anesthesiologist proceeds to monitor his/her ECG, blood pressure and oximetry.

Most of our operations were performed using a short-term general anesthesia with muscle relaxants. Caudal block or spinal anesthesia was used for patients who were not found suitable for general anesthesia. Procedures like pilonidal sinus surgery, removal of condylomata were carried out using local anesthesia.

The procedures were carried out after careful disinfection of the operative field. No intra-anal wound dressing was done except covering the external wounds by an absorbent pad. Patients were kept under observation in the ward for next few hours to contain vomiting, urinary retention, pain or post anesthesia events, if any.

The patients received a leaflet exhaustively detailing essential post-operative care along with dietary instructions and an elaborate prescription for sitzbath, dressing, application of ointments, analgesics, and laxatives. They were provided with a 24-hour telephone call facility to report any complication or address any query regarding postoperative care.

The patients were discharged home after applying the following criteria:

1. Stable vital signs for at least 2 hours.
2. Adequate pain control.
3. Minimal nausea, vomiting or dizziness.
4. Correct orientation as to time, place and relevant people.
5. Adequate hydration.
6. Patients having significant risk of urinary retention after having already passed urine.
7. The patients able to help themselves to the toilet and in dressing-up on their own.

Postoperative Care

The patients were instructed to take a warm water sitzbath immediately after each defecation and again at bedtime. They were asked to apply a cream containing local anesthetics and antiseptics twice in a day and as and when they felt pain or passed stool. Systemic antibiotics were prescribed to patients who were operated for infective pathologies like anal fistula, abscess etc. Emphasis was placed on inducing an early bowel action and so a liberal use of fiber supplement and stool softeners was encouraged.

Control of post defecation pain is considered of vital importance in the domain of proctology practice. Patients were instructed to consume analgesics on s.o.s basis to contain pain. The analgesics routinely prescribed were Paracetamol, Tramadol and Diclofenac sodium.

Follow-Up

Patients were called in the office at 2 and 4 week post operation or earlier if needed. The follow-up was carried till the wounds healed com-
pletely. They were asked to rate the level of satisfaction as high, good or low at the last follow-up. The late follow-up was carried up to 2 years.

Statistical analysis – All patient’s data was entered into a database and statistical analysis was performed using statistical software (Graph pad Software, San Diego, CA).

Results

The study included 3256 patients who underwent ambulatory ano-rectal surgery. The mean age of all the patients was 37.5 years [range 2-64 years]. 61% patients were male with a mean age of 41 years [range 2-63 years]. The mean age of females was 38.5 years [range 9-64 years]. As far ASA classification, 2485 patients presented with ASA level I, while 739 patients presented with ASA level II and 32 patients as ASA level III (Table I).

Level IV or V patients were not subjected to ambulatory surgery and were not included in our study. The type of anesthesia used in patients is described in Table II.

The most frequent type of surgery performed was anal sphincterotomy for anal fissures while the next common surgical procedure was for removal of hemorrhoids. The list of procedures performed is given in Figure 1.

There was no mortality. The mean duration of hospital stay was 8.4 hours [range 3-22 hours]. There were no episodes of vomiting or nausea that prevented discharge.

Ninety-four (2.9%) of our patients had post-operative complications. Of this 78 were considered minor and only 16 had major complications that required hospital admission. Of the minor complications, urinary retention, perianal thrombosis and fecal impaction were the most common. Urinary retention was treated with urinary bladder drainage for one time. None of the patient needed a dwelling catheter. Fecal impaction was resolved by manual extraction in the office. The patients with perianal thrombosis were reassured and the thrombosis resolved by its own in two weeks (Table III).

Of the 16 patients with major complications, nine patients returned with secondary bleeding. They were readmitted. While seven of them were resolved with conservative treatment in the form of local compression, hemostatic medication and rest, two needed examination under anesthesia with ligation of the vascular pedicle. None of these patients needed a blood transfusion.

Another five patients reported with septic complications leading to perianal abscess. Four of them had this complication after sphincterotomy for anal fissure and the fifth one was operated for hemorrhoids. These patients were treated with incision, drainage and antibiotics. They had uneventful recovery thereafter.

Two patients reported with rather unusual complications. One patient operated for hemorrhoids came with a history of loss of the plastic applicator in the rectum while applying anesthetic cream with it at home. The applicator was removed under anesthesia. Another patient came with severe perianal burns allegedly sustained

<table>
<thead>
<tr>
<th>ASA Group</th>
<th>Number of patients</th>
<th>Percentage of total patient population</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2485</td>
<td>76.4</td>
</tr>
<tr>
<td>II</td>
<td>739</td>
<td>22.7</td>
</tr>
<tr>
<td>III</td>
<td>32</td>
<td>0.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of anesthesia</th>
<th>Number of patients</th>
<th>Percentage of total patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>2289</td>
<td>70.3</td>
</tr>
<tr>
<td>Caudal</td>
<td>597</td>
<td>18.4</td>
</tr>
<tr>
<td>Spinal</td>
<td>188</td>
<td>5.7</td>
</tr>
<tr>
<td>Local</td>
<td>182</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Table I. Distribution of patients according to ASA [American Society of Anesthesiology] classification.

Table II. Distribution of patients operated with different kind of anesthesia.
during a warm water sitzbath. He was treated with local wound care and antibiotics.

Our study found no perceptible correlation between factors like the type of surgery, the postoperative visits by the patients, complications reported and the need for admission to the hospital by a few of them.

As regard satisfaction grading, 2651 (81.4%) patients were highly satisfied with the procedure, 579 (17.8%) patients rated the procedure as good while the remaining 26 patients were not satisfied with the procedure and its outcome.

**Discussion**

A correct choice of patients suitable for outpatient treatment is of vital importance because enforcement of such treatment in patients who are

Table III. List of major and minor postoperative complications encountered in day care proctology surgery.

<table>
<thead>
<tr>
<th>Complications</th>
<th>Number of patients</th>
<th>Percentage of total patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary hemorrhage</td>
<td>9</td>
<td>0.27</td>
</tr>
<tr>
<td>Septic complications</td>
<td>5</td>
<td>0.15</td>
</tr>
<tr>
<td>Loss of applicator in rectum</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td>Severe perineal burns</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Minor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention of urine</td>
<td>37</td>
<td>1.13</td>
</tr>
<tr>
<td>Perianal thrombosis</td>
<td>16</td>
<td>0.49</td>
</tr>
<tr>
<td>Fecal impaction</td>
<td>11</td>
<td>0.33</td>
</tr>
<tr>
<td>Continence disturbances</td>
<td>8</td>
<td>0.24</td>
</tr>
<tr>
<td>Local skin allergy</td>
<td>3</td>
<td>0.09</td>
</tr>
<tr>
<td>Drug hypersensitivity</td>
<td>3</td>
<td>0.09</td>
</tr>
</tbody>
</table>
suitable for in-patient treatment would compromise the method\textsuperscript{12}.

For the success of surgical treatment of anorectal diseases it is necessary to be familiar with different surgical methods best suited for the individual patient. After examination, a surgeon may decide to choose either an optimal method or a combination of two, in order to achieve the best effect\textsuperscript{13}.

The procedures suitable for day care surgery must entail: minimal risk of postoperative airway compromise, postoperative pain controllable by outpatient management techniques, minimal risk of postoperative hemorrhage, no need of a specialized nursing requirement in the postoperative course, and a rapid return to normal fluid and food intake\textsuperscript{14}.

A day care surgery offers many advantages over the indoor ones as the patient’s life is only minimally disturbed with a diminished anxiety. The incidence of nosocomial infection is minimum. There is earlier return to normal activities and a reduced time off work. The patient is usually more comfortable at home. The significant reduction in treatment costs and minimal pressure on hospital resources are the two major achievements of the day-care surgeries\textsuperscript{15}.

The most challenging problem in ambulatory proctological surgery is postoperative pain\textsuperscript{16}. This can be reduced by one or several of the following measures: infiltration with long-acting anesthetic drugs after the end of the procedure, administration of non steroidal anti-inflammatory drugs preoperatively and oral administration of opioids.

In our practice, the operated area was infiltrated with 0.5\% Bupivacaine\textsuperscript{17}.

While most of the studies have shown that nearly all the ano-rectal procedures could be performed under local or loco-regional anesthesia like posterior perineal block or caudal block and a general anesthesia should be avoided to reduce bleeding risk and the occurrence of complications related to general anesthesia, we have used all the methods of anesthesia in our series. The dislike for general anesthesia may reflect differences in surgical culture and in our patients it caused minimal morbidity\textsuperscript{18}.

Bleeding and pain are frequent complications, following proctological procedures. Their intensity however, can be influenced by the procedure and the experience of the surgeon. Through careful hemostasis and wound closure, the risk of bleeding is greatly reduced. The intensity of pain experienced by the patient is very much personality dependent and is in general unpredictable\textsuperscript{19}.

One of the common complications in our series was urinary retention\textsuperscript{20}. The reasons for postoperative urinary retention are multiple and they comprise of amount of intravenous fluid administered perioperatively, dysfunction of the detrusor, reflex urethral spasm, clinically silent prostatic hypertrophy and fear of pain\textsuperscript{21}. However, none of the patient under our study needed an indwelling catheter.

While more than 9\% of patients in our series have contacted us for the postoperative pain, none of them needed readmission. Reassurance, regulation of dietary and bowel habits; improving local hygiene and prescribing an additional dose of analgesics were enough to achieve a satisfactory pain control.

Our experience in ambulatory surgery has made it clear that good patient information and support are vital, as is early outpatient review\textsuperscript{22}. Patients knowing that they will be seeing a doctor as and when needed, will accept symptoms that may well resolve spontaneously\textsuperscript{23,24}.

It is not to overemphasize that there is a need to educate the patients on the safety, economy, accuracy and efficacy of the concept of daycare surgical procedures so that a greater number of patients could opt for and reap the benefits thereof.

In conclusion, our study confirms an already well-established observation that day care proctology can be performed with a high degree of patient satisfaction if the patient receives precise and clear preoperative explanation and also postoperative instructions.

References


