Thoracoscopic Surgery

For small peripheral lesions of unknown histology thoracoscopic resection may be preferable to open thoracotomy. This approach may be difficult, however, since such lesions if completely covered by lung parenchyma are not easily localized on thoracoscopy. Rieger et al., from Austria, have used computed tomography (CT)-guided needle localization for this purpose in 11 patients. One hour before the scheduled operation, the patient is brought to radiology. The precise location of the lesion is defined by CT scan. A 9-cm-long percutaneous needle (0.9 mm outer diameter) is positioned, through which a preshaped hook wire is inserted into the lesion. Following CT confirmation of the correct wire position, the patient is referred to the operating theater. Using double-lumen intubation for thoracoscopy, the respective lung is deflated. After resection of the lesion, the guide wire is pulled into the pleural cavity and removed together with the specimen through one of the ports. The authors have used this technique in 12 lesions from 7 to 22 mm in diameter located at least 10 mm beneath the pleural surface. All lesions were correctly identified and could be resected. Since the introduction of preoperative fine-needle localization, operation times were reduced from 78 to 53 min. No intraoperative complications were observed. The authors conclude that preoperative needle localization represents a substantial aid for thoracoscopic resection of small peripheral lesions of the lung.

Pilonidal Sinus

Surgical treatment of pilonidal sinus is frequently followed by recurrence, and numerous methods have been devised to secure primary and permanent healing following operative excision of the sinus. Özgültekin et al., from Cerrahpasa University, Istanbul, report their experience with transposition of a fasciocutaneous flap according to Limberg. Between 1988 and 1991 a total of 92 patients were treated by this method. The authors note that most of their patients (74%) had a sedentary occupation and all had excessive hair growth in the rima ani. Preoperatively all hair was carefully removed from the surgical area by shaving or epilation creme. The operative technique requires complete excision of the sinus together with surrounding subcutaneous fat tissue down to the level of the sacral fascia, including all sinus tracts. Intraoperatively the sinus was routinely injected with methylene blue to visualize its full extent. Following meticulous hemostasis and placement of a suction drain, a lateral rhomboid-shaped fasciocutaneous flap is mobilized to cover the excised area. All patients received perioperative antibiotics for 4 days starting on the day before the operation. Two of the 92 patients developed wound infection, but no other complications were recorded. Most patients were discharged between days 4 and 7 (average 5.2 days). Postoperatively no particular measures such as epilation were required. All but two patients were followed up (97.8%) at the end of 1992. No recurrent sinus was demonstrable in 87 patients, and 3 patients contacted by telephone reported no problems.

The authors conclude that fasciocutaneous flap reconstruction according to Limberg represents a safe and effective method for the treatment of pilonidal sinus. They claim that the risk of tissue necrosis of the transpositioned skin flap is minimal in contrast to other techniques such as described by Bascom, Fishbein, or Karydakis.

In another paper on the treatment of pilonidal sinus, Bunke et al., report their experience with 140 male patients treated between September 1990 and July 1992 at the Army Hospital in Giessen. The average age of the patients was 23 years (20–35 years). Again, excessive hair growth in the rima ani was noted, and according to the body mass index, 52% of the patients were overweight. Sixteen of 140 patients presented with recurrent pilonidal sinus. Preoperatively all patients received a single shot of 500 mg metronidazole plus 5 g mezlocillin. More recently, 1 g sulfactam was added to this combination.

All patients had excision of the subcutaneous fat tissue down to the level of the sacral fascia, including all sinus tracts. Following lateral mobilization of the surrounding tissue, primary wound closure was accomplished in all but one patient with extensive tracts and abscess formation, requiring open wound healing. The authors stress that a suction drain is required to prevent formation of hematoma and that the tissue covering the excised area is fixed to the sacral fascia to prevent the development of a subcutaneous cavity. Primary healing was achieved in 91% of patients. One to 3 years after the operation, 106 of 140 patients were sent a questionnaire to determine their current condition. Eighty-two patients (77%) replied. Four patients had undergone further surgery for sinus recurrence (5% recurrence rate). Only 32 patients followed the recommended epilation prophylaxis as did 2 of the 4 patients with recurrence. The authors conclude that a single-shot antibiotic treatment is sufficient to achieve a high rate of primary healing and a low recurrence rate.

Colorectal Surgery

Abdominal rectopexy represents the method of choice for surgical treatment of severe rectal prolapse. Both anterior and posterior rectopexy will correct the prolapse, but rectal incontinence and sometimes severe obstipation may persist. To date it has not been evaluated which type of treatment results in more severe forms of obstipation. Athanasiadis et al., from Duisburg, have reviewed their experience with surgical treatment of rectal prolapse to determine the effect on recurrent rectal prolapse and fecal continence of additional colonic resection in patients with and without obstipation. Between 1985 and 1991 a total of 112 patients with complete rectal prolapse were treated by abdominal posterior rectopexy using Ivalon sponges (n = 59) or Vicryl mesh repair (n = 53). Patients were followed up for between 3 months and 9.5 years. Constipation was defined as spontaneous defecation less than three times a week or at intervals of more
than 3 days. In 25 patients with severe constipation, abdominal rectopexy was combined with left hemicolectomy (n = 18), sigmoid resection (n = 3), or ileosigmoidostomy (n = 4). Colonic resection combined with Ivalon sponge insertion or Vicryl mesh repair was not associated with increased perioperative morbidity, and no complication was attributed to colon resection. The infection rate of the implant was recorded as 1.5% in the combined group versus 2.0% in the rectopexy-only group. Constipation was improved in 84% of patients with overt constipation after treatment with rectopexy and colonic resection. Following abdominal rectopexy alone, constipation was reduced in only 7.5% of patients, while it remained unchanged in 69% and worsened in 23% of patients. In the group without evidence of constipation (n = 74), colonic resection had no effect with regard to newly developing constipation, recurrent rectal prolapse, or fecal continence. The authors conclude that colonic resection in combination with rectopexy is indicated only in patients with chronic constipation. The combined procedure can be expected to effectively reduce constipation, and it is not associated with increased perioperative morbidity.

**Endorectal Sonography**

Rectal endosonography has been used with good results for clinical staging of rectal carcinoma. Sailer et al.,7 from Würzburg, employed rectal endosonography between July and December 1992 in 258 patients. Twenty-four patients (9%) were found to have pathologic lesions outside the rectum such as abscess, cysts, primary and secondary malignancies, and benign tumors. In all but one lesion, the true nature was confirmed by histology or microbiologic findings. Endosonographic assessment regarding size and location was correct in 24 lesions (89%). Ultrasound-guided needle aspiration was performed in six patients without complications. The authors emphasize the high accuracy of endorectal ultrasound when compared to CT or magnetic resonance imaging (MRT). In particular, resolution of the rectal wall and its relation to the lesion is deemed superior to CT or MRT. The authors conclude that endorectal ultrasound is a useful diagnostic tool for extrarectal lesions, allowing for easy needle biopsy and providing additional information complementing CT and MRT studies.

**Gastrointestinal Suture Technique**

Proper attention to tension-free anastomosis and preservation of adequate vascular supply, together with antibiotic prophylaxis, have made gastrointestinal anastomosis essentially safe regardless of the specific suture technique applied. Anastomotic leakage should now be so rare that the cost-effectiveness of different suture techniques may influence the choice of a particular method. Certainly, hand-sewn continuous single-layer gastrointestinal anastomosis, if safe, would be an ideal candidate for a cost-effective technique. Zoedler et al.,6 from Düsseldorf, report their experience with 846 gastrointestinal anastomoses in 596 patients treated during a 5-year period. Diagnosis included malignant and benign diseases and more than 100 patients with Crohn’s disease. A continuous single-layer technique was used both electively and in emergency patients and included gastric (n = 231), small bowel (n = 335), and colonic anastomoses (n = 280). An absorbable 4-0 suture (Vicryl, Ethicon) was used in all instances. The single-layer technique was not used for esophagojejunostomy or for anterior rectal resections, which were usually accomplished by use of a stapler. Anastomotic insufficiency was defined as manifest leakage with enterocutaneous fistula, peritonitis, or abscess formation or when endoscopy or radiologic studies indicated anastomotic leak in patients with temperatures exceeding 38°C. The occurrence of gastric anastomosis leakage was 1.7% (4 of 231 anastomoses) and two additional patients developed suture line bleeding which was controlled endoscopically. Two of the four leaks were noted in patients treated by gastric resection for gastric cancer (n = 27) and may be related to transection of the left gastric artery. The two leaks noted in patients treated for peptic ulcer disease responded to conservative treatment. Only 1 anastomotic leak was recorded in 335 small bowel anastomoses while 8 insufficiencies were observed in 280 colonic anastomoses (2.9%). Notably, only 1 anastomotic insufficiency was recorded in 107 anastomoses performed in patients with Crohn’s disease (0.9%). The authors conclude that continuous single-layer anastomoses in the gastrointestinal tract are safe and compare favorably with stapled anastomoses with regard to cost.

**Endovascular Surgery**

For patients with vascular disease, the precise indications for the use of either endovascular techniques or open surgery need to be defined to provide maximum benefit at minimal risk. A particular situation arises when the endovascular technique fails and the vascular surgeon is called upon to correct complications of percutaneous transluminal angioplasty (PTA). Kasprzak et al.,7 from Nuremberg, have reviewed their experience with 263 patients requiring treatment for complications of percutaneous transluminal angioplasty. A total of 266 complications were treated between 1986 and 1994. Most complications were seen following treatment of the femoral artery (n = 119) and the iliac arteries (n = 80). Twenty-nine complications developed after treatment of the renal or mesenteric arteries. The site of the complication involved the vascular puncture site (n = 35), the site of the treatment (n = 210), or peripheral vessels (n = 21). The complication most frequently requiring treatment by open vascular surgery was thrombosis of the vessel treated by percutaneous transluminal angioplasty (52%), while bleeding or aneurysm formation at the puncture site rarely required open intervention (10%). In the long term, another 10% of the patients required open surgery for restenosis. Other complications leading to open surgery included dissection (6%), embolization (7.5%), perforation (4%), and primary failure of PTA to reopen the occluded vessel (8%), while treatment of arteriovenous fistula and removal of foreign bodies were rare indications.

Evaluation of the time interval between PTA and open vascular surgery revealed that 31% (n = 83) of operations had to be performed immediately as emergency procedures. Eighty-two operations had to be done within days, while the time interval between PTA and definitive surgery was more than 4 weeks in 101 patients.

Vascular reconstructive operations with distal anastomoses below the knee (popliteal III or crural) were carried out in 42 patients. At 4 weeks, the primary patency rate in this group of patients was only 69% and 14 patients required bypass revision. Even then, the secondary patency rate at 4 weeks was only 74%. Fifteen patients of the total group required above- or below-knee amputation within 12 months after failed PTA of the femoral artery despite subsequent femoro-popliteal reconstruction by open surgery.

The authors point out that poor results of femorodistal reconstructions may in part be explained by peripheral micro-