

Inguinal hernia repair as an ambulatory surgical procedure: Patient satisfaction and quality assurance

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Inguinal hernias affect over half a million North Americans annually. They occur mainly in men and can be associated with significant morbidity and occasional mortality. This common problem is often corrected surgically and inguinal herniorrhaphy is one of the most common procedures performed by general surgeons. In the past 40 years, the management of this surgery has been progressively changing from an inpatient to an ambulatory setting. Although ambulatory surgery can benefit both patients and institutions, it is important to ensure that quality of care and patient satisfaction are not sacrificed by this change. To verify whether or not this sort of sacrifice is occurring at the Victoria General Hospital in Halifax, Nova Scotia, a postoperative telephone survey of 16 consecutive patients was conducted in the general surgical practice of one of the hospital's surgeons. The results of this case series showed that patients are highly satisfied with the results of ambulatory hernia repair.

Inguinal hernias affect over 500 000 people in North America each year (1). They occur more often in men than in women, and greater than 90% of all inguinal hernia repairs are performed on males (2). An inguinal hernia is the result of weakening or tearing of the lower abdominal transversalis fascia, allowing a portion of intestine to bulge into the inguinal canal either through the internal inguinal ring (indirect) or directly through the floor of the inguinal canal (direct) (1). Depending on the size of the defect, this can result in a palpable bulge of intestine in the groin, which may even extend down into the scrotum (2). Other symptoms consist of increasing soreness in the groin as the day progresses or with heavy lifting (3). Pain may even be "searing" as an enlarging hernia begins to protrude through the external inguinal ring and impinges on the ilioinguinal and iliohypogastric nerves (3). The bulging intestine typically can be reduced or pushed back into the abdomen with gentle pressure, but occasionally may become

trapped or incarcerated (3). In this setting, the bowel may become obstructed or strangulated, both of which may become life-threatening (3). To eliminate the often annoying bulge, relieve the pain, and prevent possible complications, surgical repair of the defect may be performed.

Repair of the hernia, or herniorrhaphy, is one of the procedures most frequently performed on adults by general surgeons (1). The traditional methods of hernia repair require an eight centimetre incision to be made in the groin on the affected side to enable the hernia sac to be identified and isolated by blunt or preferably sharp dissection (4,5). The contents of the sac are then returned to the abdomen, and the base of the sac is often ligated (4). The original defect in the musculature that caused the hernia must then be corrected, either with simple sutures or with polypropylene mesh (4,6). Alternatively, some hernias are now being repaired laparoscopically from within the abdomen (7). The straightforward, open surgical approach typically takes about one hour (6) and may be performed with a local anaesthetic, or alternatively under general, spinal or epidural anaesthesia (4). Postoperative complications may include: wound complications, such

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as incisional and scrotal swelling and bruising, hematoma (in up to 7% of patients), and infection (1% of patients) (4). Other complications may include transient urinary retention, which occurs in 5% of patients with local anaesthesia and 10% to 20% of patients undergoing general or spinal anaesthesia (4), ischemic orchitis due to trauma to the spermatic cord during dissection (5), and rarely, neuralgia from nerve injury (4). Because of the simplicity of the surgery and the relative infrequency of serious complications requiring hospitalization, this procedure is often performed on an ambulatory basis.

Ambulatory surgery (also called day stay or outpatient surgery) involves discharge from hospital the same day as surgery, without an overnight stay in hospital (8). Only recently, has this approach been applied to surgical procedures typically followed by admission to hospital (9). Trends in inguinal hernia repair at the Victoria General Hospital, Halifax, Nova Scotia, have changed dramatically over the past ten years (Fig. 1). In 1994, 48% of inguinal hernias were repaired on an ambulatory basis, compared to only 8% in 1984 (personal communication, Medical Records Department, Victoria General Hospital).

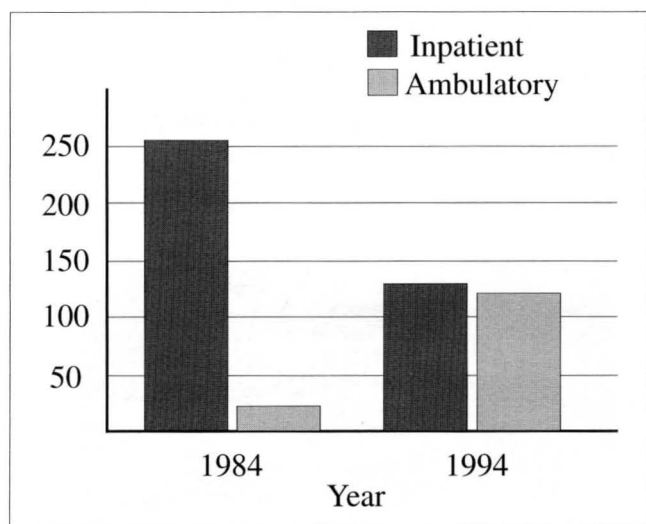


Figure 1: Number of inguinal hernia repairs at the Victoria General Hospital 1984-1994 (Source: Medical Records Department, Victoria General Hospital).

Although most adults are good candidates for ambulatory herniorrhaphy (4), ambulatory surgery is not recommended in certain circumstances such as: absence of personal transport, patients living alone, the presence of certain confounding medical conditions, operations requiring more than one hour of anaesthesia, patients living more than one hour away from hospital, and patients unwilling to accept day surgery (8). In these circumstances, inpatient surgery should be considered.

Ambulatory surgery has several benefits for both the patient and the institution. By avoiding an overnight stay in hospital, ambulatory surgery results in less

lifestyle disruption for the patient (9,10), as well as minimizing the apparent seriousness of the surgery and the emotional impact major surgery can have on a patient (5). Away from the hospital setting, patients may also be less susceptible to infections (11). Day patient surgery also keeps hospital beds available for those who need them (9), shortens waiting lists which are often determined by the availability of hospital beds (12) and avoids the added expenses associated with bed and nursing costs (10). Currently, over 250 hernia repairs are performed annually at the Victoria General Hospital (personal communication, Medical Records Department, Victoria General Hospital). At a cost of \$1066 per night for a patient admitted to hospital, ambulatory surgery in all hernia patients could lead to a savings of over \$1 000 000 annually, as compared to inpatient surgery (assuming an average 4.4 night stay as in 1994; personal communication, Finance Department, Victoria General Hospital). In order to achieve this degree of savings, more surgeons would have to switch to an ambulatory approach. Although not every patient is a candidate for ambulatory surgery, it may be appropriate in the vast majority of cases.

Despite the potential benefits to the patient, one must consider in these days of fiscal constraint that the main impetus for ambulatory surgery is financial. Thus, it is important to assure that the quality of patient care and the level of patient satisfaction are not being sacrificed to save money. To assess patient satisfaction with ambulatory surgery for inguinal herniorrhaphy, we conducted a postoperative telephone survey of patients from the Victoria General Hospital, Halifax, Nova Scotia.

METHODS

Over a six month period between November 1994 and April 1995, all of the patients in the General Surgery practice of Dr. P. D. Roy at the Victoria General Hospital undergoing outpatient surgical repair of inguinal hernias were surveyed. During this period, only one additional patient was not a candidate for ambulatory surgery. This patient had the procedure performed on an outpatient basis, and was not surveyed. The remaining 16 patients (all men) underwent ambulatory hernia repair. These 16 men between the ages of 23 and 68 (mean 46), all of whom agreed to participate in the survey, were followed up by telephone, approximately eight weeks after surgery.

The survey inquired about the length of time required to return to various activities of daily living and to return to work, if employed. Any complications of surgery were noted. The survey also asked about patients' satisfaction with their surgical experience, and patients were asked if they felt that they were discharged from hospital too soon postoperatively.

RESULTS

All of the 16 ambulatory surgery patients partici-

pated in the survey, giving a follow-up rate of 100%. Of these 16 patients, 13 underwent unilateral hernia repair and 3 required bilateral hernia repair. Six of these repairs involved the use of mesh prostheses. All but one of the patients received local anaesthetic (marcaine), in addition to general or spinal anaesthetic, to aid in early ambulation. On average, patients were free of pain at rest in 1.9 weeks (range 0 to 6 weeks), pain-free with activity at 2.7 weeks (range 0 to 6 weeks), and had discontinued pain medication after 3.6 days (range 0 to 14 days). Patients were able to return to light chores in an average of 1.5 weeks (range 0 to 6 weeks), and of the 12 who were employed, returned to work after a mean convalescence of 3.1 weeks (range 1 to 8 weeks, dependent on lifting requirements). Sexual activity was resumed on average 2.3 weeks postoperatively (range 0.5 to 6 weeks), and patients reported feeling completely recovered in 5.7 weeks (range 2.5 to 8 weeks). Postoperative complications included bruising in six patients, temporary osteitis pubis in one patient, one patient had testicular pain for one week, and one had a hematoma and neuralgia which persisted for several weeks. Two patients encountered temporary urinary retention. Three patients reported that they felt they were discharged from hospital too soon postoperatively. The explanations for this complaint were varied. One patient gave fatigue as the reason for feeling that he was discharged too early, another had numbness in one leg which made walking difficult, and the third felt that early ambulation may have resulted in his hematoma and subsequent neuralgia. Average preoperative hernia severity (on a scale of one to 10) was reported to range from one to eight (mean 5.7). Patient satisfaction with the results of the surgery (on a scale of one to 10) ranged from six to 10 (mean 9.4), and all would have chosen the surgery again.

DISCUSSION

Results of the telephone survey indicate that patients were highly satisfied with the results of their surgery. After their experience with ambulatory surgery, all of the patients stated that they would again choose to have surgery, if presented with the same situation. Overall, patient satisfaction with the results of surgery was 9.4 out of 10, again showing the high level of patient satisfaction.

There were no serious complications of surgery requiring rehospitalization and there is no indication that those complications encountered would have been modified by an overnight stay in hospital. There would have been no apparent justified benefit derived from admission to hospital following this surgery. Patients returned to a preoperative level of function in an average of 5.7 weeks. There would be no action taken during a several day stay in hospital that would have hastened this convalescence beyond that encountered at home.

There is no indication that the quality of patient care has been sacrificed in any way by the transition to ambulatory surgery. Thus, inguinal herniorrhaphy is a safe, simple surgery, which, in most patients, can be safely and economically performed on an ambulatory basis without sacrificing the quality of patient care.

REFERENCES

- Berliner SD. Adult inguinal hernia: Pathophysiology and repair. *Surg Annu* 1983;15:307-329.
- Rutkow IM and Robbins AW. Demographic, classificatory, and socioeconomic aspects of hernia repair in the United States. *Surg Clin North Am* 1993;73:413-426.
- Berliner SD. When is surgery necessary for a groin hernia? *Postgrad Med* 1990;87:149-52.
- Prichard TJ, Bloom AD and Zollinger RM Jr. Pitfalls in ambulatory treatment of inguinal hernias in adults. *Surg Clin North Am* 1991;71:1353-1362.
- Wantz GE. Ambulatory hernia surgery. *Br J Surg* 1989;76:1228-1229.
- Abdu RA. Ambulatory herniorrhaphy under local anesthesia in a community hospital. *Am J Surg* 1983;145:353-356.
- Arregui ME, Navarrete J, Davis CJ, Castro D and Nagan RF. Laparoscopic inguinal herniorrhaphy. Techniques and controversies. *Surg Clin North Am* 1993;73:513-527.
- Stephans FO. Day stay, ambulatory or outpatient surgery. *Med J Aust* 1994;160:99-100.
- Schneck LH. Ambulatory surgery: its origins, its present state, and its future direction. *AORN J* 1984;40:248-250.
- Davis JE. The future of major ambulatory surgery. *Surg Clin North Am* 1987;67:893-901.
- Ancona-Berk VA and Chalmers TC. An analysis of the costs of ambulatory and inpatient care. *AJPH* 1986;76:1102-1104.
- Stephens FO and Dudley HAF. An organization for outpatient surgery. *Lancet* 1961;1:1042-1044.
- Hawkshaw D. A day surgery patient telephone follow-up survey. *Br J Nurs* 1994;3:348-350.

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