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Ambulatory surgery in abdominal wall pathology: 7 years experience

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Abstract

We present 2100 cases of abdominal wall pathology operated on under local anesthesia, in an ambulatory setting during the last 7 years. The pathology involved included: inguinal hernias (70%), umbilical hernias (8%) epigastric hernias (6%), ventrolateral hernias (1.6%), incisional hernias. (13.5%), abdominal wall tumors (0.5%), and tumors of the spermatic cord or round ligament, (0.4%). All the patients went out of the operating room walking on their own, and immediately returned to their usual activities, with no hospital stay at all. We found in our series seven important complications (0.3%), three wound infections, two atrophic testicles, a seroma and a hematoma. We emphasize the simplicity of the method and the patient's immediate ambulation, based on experimental works in healing and immunology.

Keywords: Ambulatory surgery; Hernia; Incisional hernia

1. Introduction

Available research on healing and immunology in molecular biology [2,4–9,11] encouraged us to start a program of ambulatory surgery for any kind of abdominal wall pathology. A smooth post-operative course, low morbidity and developing a simple protocol have been, and are our aims.

2. Methods

A total of 2100 ambulatory operations were performed between June 1990 and May 1997 (70% of all abdominal wall pathology). The ages ranged from 13 to 96 years. Patients were selected according to the type of pathology (size and importance of the lesion and procedure to be performed), and their level of understanding, attitude and acceptance, bearing in mind that patients remained conscious, awake and aware throughout the whole of their operations.

All operations were classified as follows (numbers in percent):

Inguinal hernias	70.0
Umbilical hernias	8.0
Epigastric hernias	6.0
Incisional hernias	13.5
Wall tumors	0.5
Ventrolateral hernias	1.6
Tumors of the spermatic cord and round ligament	0.4

The most common surgical techniques used for the repairs were:

(1) In groin hernias: Marcy, Madden, Shouldice two layer—Nyhus, Barroetaveña, Acevedo, Wantz, Bendavid, Lichtenstein plug and McEvedy Ogilvie procedures for femoral hernias, -prosthetic repairs either by anterior or posterior approach, Lichtenstein and Gilbert free tension techniques.

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(2) In ventrolateral, epigastric, subcostal and incisional hernias: anatomic repair techniques, Morestin, Mayo, procedures, and meshes with or without relaxing incisions.

Routine preoperative studies were obtained in all cases. Preoperatively, patients were admitted to a waiting room in the hospital. Afterwards, they were taken to the operating theatre where they were administered intravenous solutions and a unique antibiotic course through a catheter placed percutaneously into a peripheral vein. Patients were connected to a cardiac monitor and an oximeter, No anesthesiologist routinely took part in the procedures. Only in high risk cardiac cases was monitoring performed by a specialist. However, operating theatre and I.C.U. are contigous.

No preanesthesic medication or sedative was administered to the patients. A meticulous and thorough washing of the abdominal skin with antiseptic soap was carried out.

Local anesthetic was infiltrated into all layers (skin, subcutaneous tissue, aponeurosis, muscle and peritoneum) successively during the operation, The local anesthetic based on published studies [3,13] was 0.5% bicarbonated lidocaine with or without epinephrine. The usual anesthetic dose required was 60–80 ml (for a groin hernia). Haemostasis was required by ligaticin of the vessels with thin absorbable material, and/or electrical coagulation. Peritoneal approximation was carried out with slowly absorbable suture and aponeurotico–fascial continuous approximation with a continous 00 polypropilene suture. The skin was closed with a subcuticular suture of the same material and hypoallergenic porous.

Patients walked out of the operating room unassisted and immediately returned to their usual activities conditioned only by any discomfort they might have that was controlled by analgesics.

3. Results

Only seven of the 2100 cases (0.3%) had complications: three wound infections, with good response to local cures with sugar, a seroma that was drained without complications; a hematoma subsequent to trauma suffered by the patient and successfully treated by drainage; two atrophic testicles (once in a recurrence of a previous recurrence and the other subsequent to an infection).

Almost 3% of the operated patients developed minimal subcutaneous inflammatory responses that did not interfere with their postoperative course.

During the postoperative period, simple analgesic agents were administered as needed. The wound was inspected at 48 and 96 h. Patients who underwent ambulatory surgery were followed up postoperatively at 7, 15, 30, 90, 180, 360 days and subsequently every year.

Until now, not one of the 2100 operated patients have returned to the hospital because of medical complications (heart-attack, thromboembolism, etc) yet we have operated on many high risk cardio-respiratory patients).

4. Discussion

Inguinal hernias are the commonest abdominal wall pathology and have considerable economic implications. As such their repair gave a worldwide stimulus to one day hospital surgery, or early discharge surgery [10,12,14] In Aureggi's centre [1] where the patient is discharged from hospital two hours after their operation, to our knowledge in all other specialized centres, the patients are sent home the evening of the following day.

We would emphasize the difference between:

(1) Ambulatory surgery: with minimal preoperative and postoperative stay (our approach).

(2) Brief hospital stay surgery: a short recovery room stay, and subsequent postoperative controls in the following 2, 4, 6, 12 or 24 h.

(3) Surgery with a hospital stay of more than 1 day.

In all our cases the recurrence rate ranges from 0 to 1%. The complication frequency was similar or lower than that observed with traditional postoperative rest times. The specialization of surgeons, the use of inert sutures, the antiseptic precautions and the scientific principles adopted from experimental work in inflammation angiogenesis and cellular growth [6], as well as our clinical experience with this management, will allow the spread of the surgical range to almost all abdominal wall pathology. The following should be considered when selecting patients for ambulatory surgery:

(1) Physical, cardiac and respiratory condition; the more serious the case is, the more important it is to use our technique.

(2) Patient's level of understanding, attitude and acceptance.

(3) Size of the lesion.

(4) Reducibility of hernia.

(5) Interrelated factors.

In this important area of surgery there is active participation by surgical residents who are beginning their surgical experience. The fact of using local anesthesia without premedication compels them to be extremely delicate, gentle and careful with their manoeuvres. This contributes to an improved postoperative course.

The advantages of our approach to surgical management of abdominal wall pathology are:

(1) The excellent biological response of patients.

(2) The immediate return to their usual activities and work, that leads to a decrease in overall social costs.

5. Conclusions

We conclude that there are many advantages in ambulatory surgery undertaken as we describe:

(1) For the patient:

- Immediate ambulation.
- Immediate food tolerance.
- Immediate return to activities.

(2) For the health care system:

- Minimizes the needs of supporting infrastructure (drugs, beds, nursing, etc).

(3) For teaching purposes.

- It does not allow brusque manoeuvres.
- It compels acting with ductility and delicacy.

We also conclude that a new technique should be:

(1) For the surgeon:

- Simpler, less complex or easier to perform.
- More economical or less costly.

(2) For the patient:

- Gives better results.
- Have lower morbidity.
- Based on biological facts.

6. Commentary

The spirit of this work is to show two facts:

(1) There are various techniques for Hernia repair. With all of them, as long as the defect is reconstructed with solid anatomic or prosthetic elements, success can be obtained. The surgeon must choose, the most appropriate response for each case.

(2) There is no point, indeed it is counterproductive, to have a patient lying down to heal a wound. Doubtless biologically, as happens in the animal world, it is better to be active immediately.

To achieve this, the only thing needed is to modify the surgeon's behaviour, without the use of expensive, new technical tools.

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References

[1] Aureggi A, Virno F. Outpatient's surgery of inguinal and crural hernias: a report of 468 cases. Ital J Surg Sci 1988;18:365.
[2] Beck L Jr., D'Amore P. Vascular development: cellular and molecular regulation. FASEB J 1997;11:365–73.
[3] Butron López GF. Influencia de la alcalinizacidn de las soluciones anestesicas locales sobre el periodo de latencia en analgesia peridural. Rev Argentina Anesthesiol 1979;37:291.
[4] Demerel J, Jochi T, Steel J, et al. Tension and compression in the cytoskeleton of PC-12 neurities 11: quantitative measurements. J Cell Biol 1988;107:665.
[5] Folkman J. Angiogenesis in cancer, vascular rheumatoid and other disease. Nature Med. 1995;1(1):27–31.
[6] Folkman J, Amore P. Blood vessel formation: what is molecular basis? Cell 1996;87:1153–5.
[7] Hogg N. The leucocyte intregins. Immunol Today 1989;10:111.
[8] Ingber D, Folkman J. How does extracellular matrix control capillary morphogenesis? Cell 1989;58:803.
[9] Ingber D, Folkman J. Mechanochemical switching between growth and differentiation during fibroblast growth factor-stimulated angiogenesis in vitro: role of extracellular matrix. J Cell Biol 1989;109:317.
[10] King B. Patients satisfactory surgery day surgery units. Auts Clin Rev 1989;26:167.
[11] Menger MD, Vollmar B. Adhesian molecules as determinants of disease: from molecular biology to surgical research. Br J Surg 1996;83:588–601.
[12] Ofili O, Osime U, Morgan A. Outpatient inguinal herniorraphy with postoperative domiciliary care in a developing country: a prospective clinical study in adult Nigerians. Ethiop Med J 1988;26:167.
[13] Wantz G. The Canadian Repair. World J Surg 1989;13:516.
[14] Zhumadilov A, Kasnakov T, Musinov D, Tazhibaev D, Kharchako L. An ambulatary hospital method of treating patients with uncomplicated abdominal hernia. Klin Khir 1988;2:38.