

Day-Case Inguinal Hernia Repair: Is Post-Surgical Pain at 30 days indicative of Chronic Pain?

Vasconcelos G, Coelho S.

Abstract

Aim: To determine the incidence of chronic post-surgical pain in day-case inguinal hernia repair, and identify predictive factors.

Methods: Retrospective study by clinical records and a phone call questionnaire, 24h and 3 to 6 months after patients undergoing inguinal hernia repair, during a period of one year, applied to 90 patients.

Keywords: Ambulatory surgery; Day-case, inguinal hernia repair, chronic pain.

Authors' addresses: Department of Anaesthesiology, Hospital Pedro Hispano, Portugal.

Corresponding author: G.Vasconcelos E-mail: gi_vasc@yahoo.com

Results: A response rate of 86% was obtained. At 30 days after the surgery the pain registered was similar to the 3-6 months results. No relation was found between the postoperative pain at 24h and future pain.

Conclusion: Early evaluation and treatment of pain before the 30 days is crucial.

Introduction

Inguinal hernia repair is a common procedure with a low short-term postoperative morbidity but with a reported incidence of chronic pain from 0% to 62% [1, 2, 3]. The reason is not well identified. Chronic pain could be related to the surgical procedure used. A lower incidence is reported after laparoscopic repair (28,7%) versus open repair (36,7%) [4]. Others factors could be related to a higher postoperative pain: middle age, male gender, recurrent hernia repair, preoperative pain and immediate postoperative pain, psychiatric pathology and treatment [2, 5]. About 10,7% patients have a worse pain after the surgery [6], and the interference with work life and social activities was stated between 10 and 56,6% [6, 7]. The estimated median time to the resumption of normal daily activity is 10 days; time to return to work, 21 days; time to athletic activities practice, 36 days [8].

The definition of chronic pain by The International Association for the Study of Pain is pain as the outcome measure, occurring for a minimum of 3 months after the surgical repair, and not existing the 6 months before [9].

Our Ambulatory Unit telephones all patients, at postoperative 24 hours. In this study we collected the information from preoperative records, the phone call at the 24h, the postoperative 30 days surgeon appointment and the phone call questionnaire at the 3 to 6 months after the surgery. The information included functional capacity, physical signs and symptoms, return to daily activities and to work. The aim of this investigation is to estimate the incidence of chronic post-surgical pain after hernia inguinal repair in day case surgery, to identify predictive factors and to assess its impact on patients' quality of life, in our population.

Methods

This was a retrospective study using clinical records and a phone call questionnaire performed twice, at 24h and at 3 to 6 months after patients' undergoing Lichtenstein inguinal hernia repair in the Ambulatory Surgery Unit.

The exclusion criteria were bilateral repair, recurrent hernia repair, inguinal hernia repair and other surgery in the same intervention, laparoscopic repair, repair without a mesh, and patients with cognitive dysfunction. The inclusion criteria were: male, ASA Physical Status Classes I and II, age over 18 years old and unilateral repair. A total of 90 patients were included.

The anaesthesia protocol was general anaesthesia induction with propofol (1,5mg–2mg/Kg), fentanyl (3µg/kg) and vecuronium (0,1mg/Kg), and maintenance with sevofluran and oxygen at 40%. The analgesia was accomplished by paracetamol, nonsteroidal anti-inflammatory drugs (NSAIDs), and local infiltration with ropivacaine 0.5% done by the surgeon at the end of the procedure. Patients stayed in the Postanaesthetic Care Unit (PACU) about 4 hours, until they could tolerate oral intake and had voided. The patients were discharged home with paracetamol and NSAIDs prescription for the first 3 days after the surgery and with the information to phone or return if they felt anything was wrong.

Data were collected from clinical records and phone call questionnaires at two different times, 24 hours and 3 to 6 months after the surgery. The first call, about early postoperative complications and patients satisfaction is routinely done in the Unit. The second questionnaire has two parts, the first about the preoperative state, and the second about the postoperative state. The pain was classified as none, mild, moderate and severe. The preoperative part included questions about pain in the inguinal area and pain in other locations, pain at rest or with exercise, analgesic need, and limitation of daily activities. The postoperative part included questions about pain at the immediate postoperative period, in the postoperative 24h and in the 30 days after, at rest or with exercise, and need for analgesic medication. This part also included the time to resume work; whether the patient felt better after the intervention than before the surgery; if the hernia repair corresponded to the individual expectation; and if necessary, this kind of intervention would be repeated.

Epi Info 2002 was the statistic programme. The Chi square test was used and considered statistically significant if $P < 0,05$.

Results

Before surgery severe pain was reported at rest in 10% of the patients and with exercise in 32%, with activity limitation in 56% of the cases. Only 20% use medication to control the pain. Ten percent of patients had another pain with analgesic medication use. In the PACU was registered no pain was reported by 53,3%, mild pain by 29,3%, moderate pain by 16%, and severe pain by just one patient.

The same response rate of 86% was obtained for the phone call questionnaires at the immediate postoperative 24h and at the 3 to 6 months. At 24 hours after the surgery, only 10,5% of patients had moderate pain and 6,6% had severe pain (Graphic 1). It was found that 7,9% didn't follow the analgesic medication regimen instituted. At three months after the surgery, 1,3% had moderate pain at rest and about 6,7% with exercise, and two patients used medication to control this pain. Five patients were directed to the chronic pain service because they complained of moderate to severe pain. All of these patients had moderate pain in the 24hours immediately after the surgery, but they didn't want to make any treatment.

At 30th day after the surgery, the patients were evaluated by the surgeon. The level of pain recorded was similar at 30 days to the level at 3–6 months after, with medication needed in 3,9% of the cases.

No booked procedure was cancelled. There was no unplanned return to the operating room on the day of the surgery, no unplanned overnight admission, and no unplanned readmission in the hospital. One patient returned the hospital at 48h after the procedure, due to skin infection in the surgical local.

A poor correlation was found between pain at the 24h and future pain. However, there was a strong relation $P(0,000)$ between rest and exercise pain at 30 days after the surgery and at 3 to 6 months after the surgery (Table 1). There were no other significant differences.

Patients resumed their daily activities between 30 to 90 days after the surgery in 52% and 90 days after in 9,3%. The late return to work is, in almost all cases, attributed to social benefits. About 12% reported some activity limitation after the intervention, but 94% reported being better after the surgery. All of them would repeat the surgery again and the surgery corresponded a lot to their expectations.

Discussion

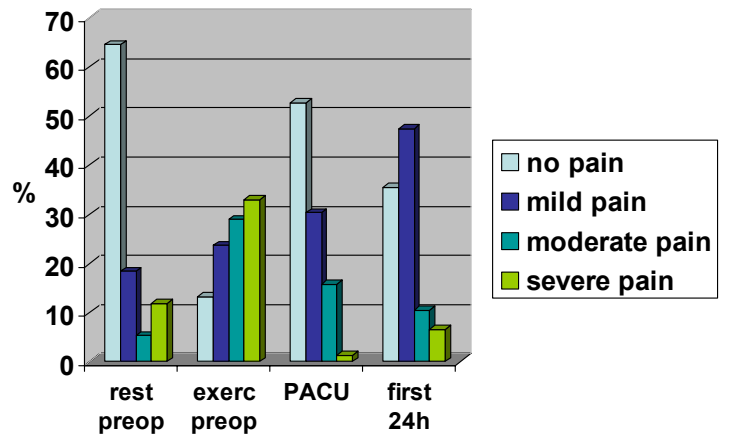
We found a low incidence of immediate and late postoperative pain compared to other studies. This study has some limitations, in that demographic variables were not considered, the surgical team was not always the same, and it is a retrospective study.

The institution of analgesic protocols is crucial in the Ambulatory Units, as are the phone call questionnaires. It is important that patients don't feel alone and by themselves. In this way the 24 hours phone call questionnaire is essential not only to get information about pain and other anaesthetic or surgical complications, but also to the patient have the feeling someone is taking care of him. In addition, the late follow up must not be forgotten.

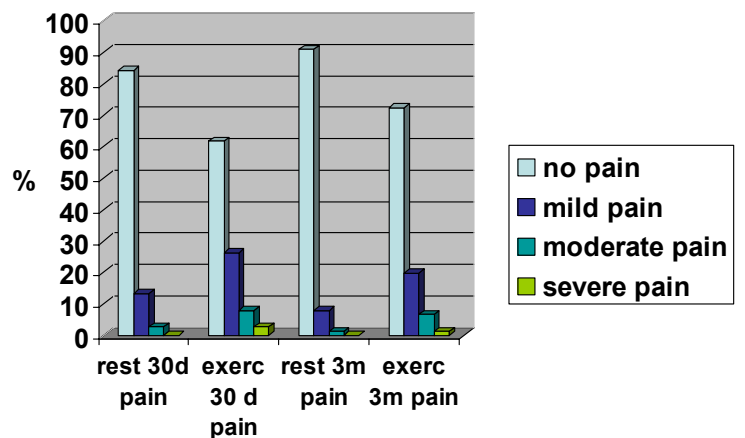
The development of chronic pain was not related to 24h postoperative pain. However, this study did find that pain at 30 days after the surgery constituted an indicator of possible future pain. Early evaluation and treatment of pain, before the 30 days is crucial. A close follow-up and multidisciplinary approach is mandatory, although the administrative limitations could impair this purpose. The surgeons have an important place in the identification and control of pain in the follow up routine appointments. Therefore it is important to educate these professionals to the importance of pain vigilance and early treatment.

References

- Perkins F, Kehlet H. Chronic Pain as an outcome of surgery: a review of predictive factors. *Anesthesiology* 2000; **93**(4): 1123–33.
- Aasvang E, Kehlet H. Chronic postoperative pain: the case of inguinal herniorrhaphy. *British Journal of Anaesthesia* 2004;
- Cunningham J and all. Cooperative hernia study. Pain in the postoperative repair. *Annals of Surgery* 1996; **224**: 598–602.
- O'Dwyer P and all. Laparoscopic versus open repair of groin hernia: a randomised comparison. *The Lancet* 1999; **354**: 185–90.
- Kehlet H, Bay-Nielsen M, Kingsnorth A. Chronic postherniorrhaphy pain – a call for uniform assessment. *Hernia* 2002; **6**: 178–181.
- Bay-Nielsen M, Nilsson E, Nordin P, Kehlet H. Chronic pain after open mesh and sutured repair of indirect inguinal hernia in young males. *British Journal of Surgery* 2004; **91**: 1372–76.
- Mikkelsen T, Werner M, Lassen B, Kehlet H. Pain and sensory dysfunction 6 to 12 months after inguinal herniotomy. *Anesthesia and Analgesia* 2004; **99**: 146–51.
- Liem M and all. Comparison of conventional anterior surgery and laparoscopic surgery for inguinal hernia repair. *The New England Journal of Medicine* 1997; **336**(22): 1541–7.
- Macrae W. Chronic pain after surgery. *British Journal of Anaesthesia* 2001; **87**: 88–98.



Graphic 1 Pain incidence in the preoperative period, at rest and with exercise, in the PACU (Postanesthetic Care Unit), and in the first 24 hours.



Graphic 2 Pain incidence in the postoperative period, at 30 days (d) in rest and with exercise (exerc); and at 3 months (m).