The value of laparoscopy in the management of chronic groin pain

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Highlights
- Positive findings of either a small hernia or cord lipoma are reported in patients who had no clinical or radiological groin abnormality and benefited from TAPP repair.
- Laparoscopy has a definite role in diagnosing chronic groin pain. TAPP repair is an effective procedure for undiagnosed groin pain.
- The laparoscopic TAPP repair had successfully managed the groin pain in 81 patients (88.04%).

Abstract

Background: Chronic groin pain problem represents a diagnostic and management challenge. This study is reporting all patients who underwent laparoscopic exploration of the groin and pelvis for undiagnosed chronic groin pain.

Materials and methods: A retrospective cohort study. Evaluators were not involved in the operations. Laparoscopic exploration and mesh insertion using Trans-Abdominal Pre-Peritoneal (TAPP) approach was performed for all patients. Follow up in the; clinic at 2 weeks and 6 months was arranged. This was a consecutive series of patients who were presented with chronic groin pain and no pre-operative radiological, orthopedic, gynecological or urologic abnormalities. Patients who were diagnosed with clinical hernia or other positive finding were excluded.

Results: Data were collected and analyzed for 92 patients. The operation had successfully managed the groin pain in 81 patients (88.04%), and the pain was improved in another 3 patients (3.26%). Six patients (6.52%) had no change in their symptoms, and worse pain was reported in two patient (2.17%).

Conclusion: Laparoscopic groin exploration is an effective method to diagnose the chronic groin pain that under diagnosed by clinical, ultrasound and MRI tests. Laparoscopic management had resulted in resolution of the pain in the majority of the patients. The procedure is effective in athletes’ patients who did not have clinical, radiological and laparoscopic evidence of groin hernia.

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1. Introduction

Chronic groin pain (CGP) patients are referred to orthopedic surgeons, gynecologist (female patients), physiotherapists and general surgeons. The orthopedic causes of CGP are usually diagnosed by clinical and radiological examination of X-Ray, Technetium, Computerized Tomography (CT) and Magnetic Resonance Imaging (MRI) scans [1]. A certain number of patients are showing no radiological abnormalities and these are usually managed by rehabilitation, possible steroid injection, anti-inflammatory analgesic medications and sometimes a referral to a general surgeon. The data on this particular group of patients are scarce and the incidence of chronic groin pain without clinical hernia is difficult to determine, but it could reach 20% [2]. Other causes of CGP are included but not limited to inguinal femoral hernias, gynecological, urological, postsurgical (postherniorrhaphy, post Pfannenstiel incision, post vasectomy, etc.).

The step-ladder measures of clinical assessment of X-Ray, Ultrasound (USS) and MRI are the investigations of choice by general
surgeon. However, patients who are showing no abnormalities represent a diagnostic challenge.

There are no national or international guidelines on how to manage these patients and the current body of evidence is represented by case series studies. A study in 2008 was the first to report laparoscopy and TAPP for CGP in general population, reporting 43 patients out of more than 1000 patients underwent laparoscopic Trans Abdominal Pre Peritoneal approach TAPP [3].

In this report we are sharing our 12 years experience and management of this problem. The aim was to test the value of laparoscopy and TAPP repair for this cohort of patients.

2. Patients and methods

Study design and setting: retrospective cohort study at secondary referral centre.

Participants: patients whom underwent TAPP repair for chronic undiagnosed groin pain.

Data source and variables: retrospective data were retrieved from prospectively collected details and also from case notes and tabulated on special proforma including patient demographic features, occupation, date of operation and discharge and the follow up details, outcomes and pain assessment after the operation. These data were analyzed for 92 patients (see Fig. 1). The primary end point was the cure of chronic groin pain; the secondary outcomes were recurrent pain and failure of surgery.

Bias: patients were assessed by subjective pain numeric score (0–10). The clinical outcomes were assessed by two team members who were not involved in the operations, the clinical assessment bias although was possible but was reduced to a negligible level. The cohort was a consecutive patients, thus selection bias was completely excluded.

Quantitative variables: the postoperative pain was assessed for all patients. Patients whom had positive laparoscopic findings were the majority and the TAPP repair was the management of choice anyway. For patients who had no hernia on laparoscopy, they were managed by TAPP repair and subgroup analysis was conducted.

Statistical methods: simple statistics were applied.

Inclusion criteria:

1. Localized chronic groin pain more than 6 months, interferes with everyday life and
2. No hernia, no orthopedic/musculoskeletal abnormality on clinical examination.
3. Minimum combination of preoperative tests of normal groin MRI and USS ± Plain pelvic or hip x-rays.
4. Normal gynecological assessment (clinical and radiological) in women. Groin examination findings (in upright and supine positions) of localized tenderness, external ring assessment, cough impulse; leg raises and scrotal examination are recorded.

Exclusion criteria: other diagnosis such as clinical groin hernia, lymphadenitis, and bone abnormality, patients who had previous groin hernia surgery, vascular, hip surgery, and gynecological and urological pathology. Local committee and the general surgery lead approved the study. All patients were consented for the procedure.

All patients were followed up in the clinic at 2 weeks and 6 months after the operation. The patients were discharged if they have no pain. For partial or no response to laparoscopic management, further investigations by USS and MRI scans were arranged to exclude post-surgical complications or failure. If no such complications, they were referred to the pain team for further management. The pain was assessed by two members of the general surgery team other than the main surgeon (both were not conducting any operation) using usual Numeric Rating Scale NRS from 0 to 10 [4].

The USS examination and MRI reporting was performed by independent dedicated radiologist.

The technique of USS was including Valsalva maneuver as well as examining patients in the standing and supine positions.

Operative technique: Under general anesthetic and supine position, the pneumoperitoneum was initiated and a pressure of 16 mmHg was ensured. Trans-Abdominal Pre-Peritoneal (TAPP) technique was used in all patients.

Prolene mesh (Cousin biotech, France) was used and fixed by single vicryl stitch to the upper flap. The peritoneum was closed using intra-corporeal continuous vicryl stitching method. The ports were closed after deflation.

3. Results

We performed 2316 laparoscopic groin hernia repairs using TAPP approach. Ninety-two patients (3.97%), (11 women and 81 men) with variable life activities and employment were included in this study (see Fig. 1). Only 9 patients (9.78%) played football at professional level.

31 patients (33.69%) were engaged in the sports regularly. The mean age of these patients was 38 years (range, 17–74 years). The clinical invagination test showed a wide external inguinal ring in 61 (66.3%) patients and a tender inguinal canal in another 14 (15.21%) patients. 63 patients (68.47%) had positive laparoscopy showing either a small groin hernia or large lipoma of the inguinal canal with no sac (Fig. 2). Negative laparoscopy was reported in 29 patients (31.52%). All patients had mesh insertion. The operation had successfully managed the groin pain in 81 patients (88.04%), and
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