

Unexplained groin pain: safety and reliability of herniography for the diagnosis of occult hernias

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Abstract

A retrospective study of our initial experience of herniography in a district general hospital is presented. A total of 43 herniograms were performed in 41 patients (median age 57, range 16-77, 27 males, 14 females) over a two year period. Four herniograms were unsuccessful due to failed intraperitoneal contrast injection, of which two were repeated (success rate 90.5%). A total of 25 groin hernias were identified radiologically (two on the asymptomatic side). Twenty one patients underwent surgery and a hernia was confirmed in 19 (true positive rate 90.5%). Sixteen herniograms were considered negative and after a median follow up of 28 months (range 16-42 months), none of these patients have developed a hernia. There were no major complications. It is concluded that herniography is a safe and reliable method of determining or excluding the presence of an occult groin hernia. (Postgrad Med J 2001;77:250-251)

Keywords: groin hernia; groin pain; herniography; herniogram

A hernia is a common cause of groin pain.¹ Most patients present with a swelling that can readily be diagnosed clinically. By comparison, those with groin pain but no swelling are a diagnostic challenge. They are often subjected to a variety of investigations and, when all else fails, may undergo laparoscopy or surgical exploration. Herniography has been advocated as a simple method for the detection of occult groin hernias,² but has not so far been widely adopted in the UK.^{3,4} The aim of the present study was to review our initial experience of this technique in a busy district general hospital.

Patients and methods

The study population comprised all patients undergoing herniography at Blackpool Victoria Hospital between 1 January 1995 and 31 December 1997. Indications were a history of groin pain but no detectable swelling or an intermittent lump which could not be confirmed at the time of clinical examination. A standard herniography technique was employed, injecting 50 ml of contrast medium (Omnipaque 300) into the peritoneal cavity.⁵ Patients were then screened in the prone position on a tilting fluoroscopic table while performing the Valsalva manoeuvre by one of two radiologists (RB and KB). Symptomatic patients in whom a hernia could be clearly

demonstrated radiologically were offered an open repair.

Results

A total of 43 herniograms were performed in 41 patients (median age 57, range 16-77; 27 males, 14 females). Four herniograms were unsuccessful because of failed intraperitoneal contrast injection, of which two were repeated (success rate 90.5%). Indications were right groin pain (n=21), left groin pain (n=14), bilateral groin pain (n=2), or an intermittent painful right groin lump (n=4). The median duration of symptoms before investigation was 16 weeks (range 6 weeks to 24 months).

POSITIVE HERNIOGRAM

Twenty five patients had a positive herniogram and of these, 21 underwent surgery (84%). The presence of a hernia was confirmed at operation in 19 (indirect inguinal n=13, direct n=4, femoral n=2) giving a true positive result of 90.5%. After open repair (inguinal hernia: Lichtenstein mesh repair, femoral hernia: Lotheissen repair) 16 of 19 patients (84%) reported early improvement in their symptoms. In three patients lack of symptomatic improvement was eventually blamed on previously undiagnosed degenerative disease. Two of 21 patients did not have a hernia (false positive 9.5%); in one the finding was of a weak posterior wall and in the other of an enlarged lymph node.

Four patients with a positive herniogram did not undergo surgery. In two patients the hernia was present on the opposite side from their symptoms, one patient refused operation, and in the remaining patient repair was not considered to be justified.

NEGATIVE HERNIOGRAM

Sixteen patients had a negative herniogram. Of this group one patient has since undergo groin exploration for persistent symptoms without a hernia being found. After a median follow up of 28 months (range 16-42 months) none of the other 15 patients has developed a clinical hernia.

While under review nine of 15 (60%) patients reported spontaneous improvement in their symptoms. Of the six patients with persistent symptoms, causation is considered to musculoskeletal in three, spinal in two (degenerative disease, prolapsed disc), and chronic epididymitis in one.

COMPLICATIONS

No serious complications were encountered in this study. Local discomfort after injection was minimal and all patients found the test acceptable.

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Discussion

Investigation of unexplained groin pain by plain radiography, ultrasound, or computed tomography often fails to identify a cause. Traditionally, most surgeons would keep such patient under review in the hope of spontaneous resolution, consider advice from another specialty (for example, orthopaedic surgeon, pain specialist), or explore the groin. It is recognised that some patients with groin symptoms but no detectable swelling are suffering from an occult hernia, which will improve after surgical repair. An alternative diagnosis, which can benefit from operative intervention, is a tear in the fibres of the conjoint tendon and transversalis abdominis, sometimes referred to as a "sportsman hernia" or "Gilmore's groin".^{6,7}

Management options for unexplained groin pain have been widened by the availability of laparoscopy and herniography. Laparoscopy allows direct confirmation of the presence of an occult hernia, exclusion of a contralateral defect, and provides the surgeon with an opportunity for immediate repair.⁸ However, not everyone is willing or suitable for this invasive investigation. Also the results of the Medical Research Council's Laparoscopic Groin Hernia Trial Group and subsequent correspondence demonstrate the continuing debate concerning the relative merits of open versus laparoscopic repair.⁹ Herniography, initially described in North America and now increasingly used in Scandinavia and other parts of Europe is, in our experience a simple, safe, and reliable alternative investigation.² It circumvents problems caused by patient obesity, heavy musculature, discomfort during examination, or a short sac. We found it to have a true positive rate of 90.5% and, so far, a 100% true negative rate. This is in agreement with previous studies which have reported low or non-existent false positive rates.^{3,4} By comparison, other authors have found that a negative herniogram does not exclude the presence of a hernia. Loftus *et al* report a false positive and negative rate of 18.7% and 7.9% respectively.¹⁰ It has been suggested that such results may be due to herniography being an operator dependant procedure with an associated learning curve.

No serious complications occurred among our study population, discomfort was minimal, and all patients found the investigation acceptable. By comparison, Ducharme,² Brierly *et al*,³ and Calder *et al*⁴ report a complication rate of

5.8%, 5%, and 3.8% respectively. Some of the problems that have occurred include bradyarrhythmias, peritonitis, intramural small bowel haematoma, injection into the small bowel and bladder, rectus abdominis haematoma, and urinary retention. It is worth noting that not all patients with a positive herniogram who undergo successful surgery benefit from their treatment.

Learning points

- Groin pain and a swelling is likely to be due to a hernia. Diagnosing the cause of groin pain in the absence of a detectable swelling can be difficult. Conventional investigations such as radiography, ultrasound, and computed tomography are often negative.
- Management options have been widened by the availability of laparoscopy and herniography. Laparoscopy allows direct confirmation of the presence of an occult hernia, exclusion of a contralateral defect, and provides the surgeon with the opportunity for immediate repair. However not everyone is willing or suitable for this invasive investigation. Also there is continuing debate concerning the merits of open versus laparoscopic hernia repair.
- Herniography was found in the present study to be a safe and reliable method of confirming or excluding the diagnosis of a groin hernia.

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