

Incidentally found Bilaterally Occult Femoral Hernia during Transabdominal Preperitoneal Inguinal Hernia Repair: A Case Report

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ABSTRACT

Hernia is defined as an area of anatomical weakness or an abnormal protrusion of a viscous or a part of a viscous through an opening, covering it. Inguinal hernia is the most common hernia because of the presence of natural weakness like the deep ring and cord structures. The minimally invasive procedures for inguinal hernia repair include Intraperitoneal Onlay Mesh (IPOM) repair, Transabdominal Preperitoneal Repair (TAPP), and Total Extraperitoneal (TEP) repair. Laparoscopic inguinal hernia repair has the advantage of inspecting the entire myopectineal orifice, as it allows for the identification of bilateral or recurrent hernias. The principle behind laparoscopic repair includes strengthening of myopectineal orifice in all the above approaches. TAPP repair is mainly indicated for large indirect hernias or irreducible hernia. TEP repair is technically challenging to perform and has the advantage of avoiding interbowel adhesions as the peritoneum is not opened. IPOM repair is not routinely performed but has advantages in cases where there is an increased risk of spermatic cord injury seen in patients with a history of lower abdominal irradiation or a history of multiple recurrent hernia surgery. Occult contralateral inguinal hernia and the occult femoral hernia can be easily diagnosed and repaired with no extra incisions while performing TAPP repair. These hernias, if left untreated may present as recurrent hernias or as non resolution of symptoms posthernia surgery. A rare case of bilateral occult femoral hernia found during laparoscopic TAPP repair of an inguinal hernia was reported. The entire myopectineal orifice was repaired using the same mesh with no extra risk or cost.

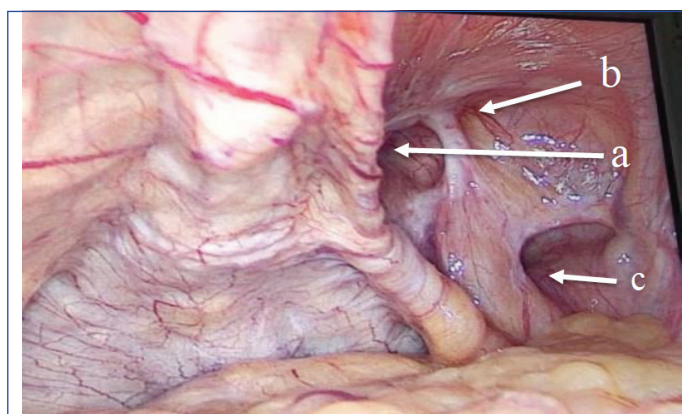
Keywords: Abnormal protrusion, Occult contralateral hernia, Transabdominal preperitoneal repair

CASE REPORT

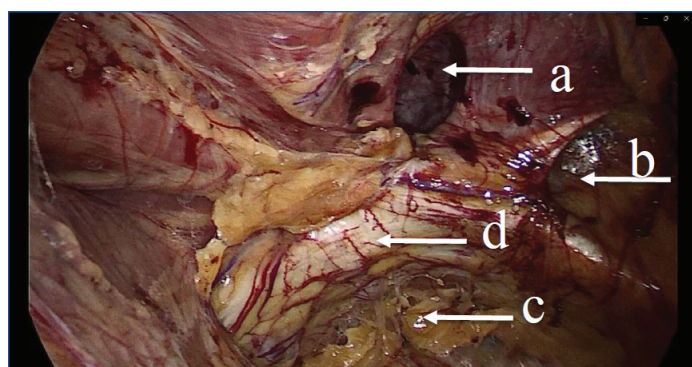
A 55-year-old male patient presented with bilateral inguinal swelling which he noticed for the last three months. He also complained of constipation for the last three years. He had no pain or any urinary symptoms. Physical examination revealed a non tender, reducible swelling of 5×3 cm on right-side and 6×4 cm on left-side. Ultrasonography showed a defect of 16 mm size on the right-side and 18 mm size on the left-side. His Haemoglobin was 12.4%, Random blood sugar 102 mg/dL serum creatinine 0.8 mg/dL. Laparoscopic TAPP was planned after diagnosing it as a bilateral uncomplicated incomplete inguinal hernia. The patient was placed in the supine position under general anaesthesia. A 10-mm port was placed for the telescope over the supraumbilical region and two 5-mm ports were placed over para rectus region infraumbilically.

After dissecting the preperitoneal space of retzius and bogros, bilateral direct inguinal hernia were found along with a bilateral femoral hernia. Femoral ring of 1 cm diameter were present on both sides [Table/Fig-1,2]. The myopectineal orifice was repaired on both

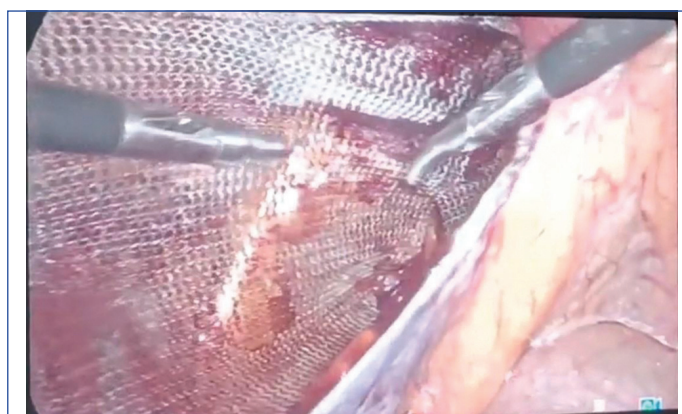
sides using medium weight prolene mesh of 12×15 cm size [Table/Fig-3]. The postoperative period was uneventful and the patient was discharged on postoperative day 2.



[Table/Fig-2]: Showing, a- Direct inguinal hernia; b- Indirect inguinal hernia; c-Femoral hernia.



[Table/Fig-1]: Showing direct, indirect inguinal hernia along with femoral hernia; a- Direct inguinal hernia; b- Indirect inguinal hernia; c- Femoral hernia; d- Cooper's ligament.



[Table/Fig-3]: Mesh placed over myopectineal orifice.

DISCUSSION

Occult hernias are those asymptomatic hernias not detected by physical examination [1]. One of the reasons for the failure of clinical examination to diagnose these femoral hernias may be their rarity as they may make up just about 5% of all patients. The incidence of occult hernias in patients diagnosed with unilateral inguinal hernia before surgery is 11-35% [2]. The most common occult hernia in the presence of inguinal hernia is occult direct inguinal hernia (4.11%) [3] followed by another inguinal hernia (2.45%), occult femoral hernia (1.23%) and obturator and Spigelian hernia is lowest at 0.08% [4]. Putnis S et al., Dulucq JL et al., and Old OJ et al., reported the incidence as 3.7% (18 of 484 patients), 5.6% (19 of 337 patients) and 2.3% (32 of 1404 patients), respectively [5-7]. Henriksen NA et al., reported an incidence of femoral hernia in patients with recurrent hernia of 9.2%, while in patients with bilateral inguinal hernia, the incidence was 3.8% [8]. Femoral hernia was significantly higher in females (26.07%) than in males (5.09%) as concluded by Bialecki J et al., [9]. According to Manoharan V and Joshi AS, out of 51 unilateral clinical hernia patients, 29 (56.7%) patients had ipsilateral occult hernia [10].

The laparoscopic approach allows for a clear view of the entire inguinal region. This enhanced visualisation can lead to the detection of bilateral or recurrent hernias, as well as other potential pathologies in the region. Inspection of the entire myopectineal orifice is particularly important in cases where occult femoral hernias are present, as they may not be clinically evident and can be easily missed during open surgery [2,4]. TAPP repair allows for the identification and repair of bilateral or recurrent hernias, which can prevent future hernia development and the potential complications that can arise from undiagnosed or untreated hernias. Additionally, the laparoscopic approach allows for the use of mesh for reinforcement of the repair, which has been shown to reduce the risk of hernia recurrence [6].

Hence, the high incidence of femoral hernia especially in females provides an upper hand to laparoscopic hernia repair compared to open surgery. Study showing increased risk of inguinodynia after Lichtenstein repair compared to laparoscopic repair may be attributed to untreated occult femoral hernias [11]. Moreover, the

same mesh used for inguinal hernia repair can be placed over femoral canal which does not increase the cost of the procedure.

CONCLUSION(S)

Bilateral occult femoral hernias can be incidentally found during inguinal hernia repairs and should be considered in the differential diagnosis. Early diagnosis and repair can prevent the development of complications such as incarceration or strangulation of the hernial contents. Laparoscopic inguinal hernia repair has a clear advantage in detecting and repair of occult femoral hernias, especially in high-risk female and elderly patients.

REFERENCES

- [1] The Hernia Surge Group. International guidelines for groin hernia management. *Hernia*. 2018;22:01-165.
- [2] Griffin KJ, Harris S, Tang TY, Skelton N, Reed JB, Harris AM. Incidence of contralateral occult inguinal hernia found at the time of laparoscopic trans-abdominal pre-peritoneal (TAPP) repair. *Hernia*. 2010;14(4):345-49. Doi: 10.1007/s10029-010-0651-6.
- [3] He J, Xu YJ, Sun P, Wang J, Yang CG. The incidence and analysis of ipsilateral occult hernia in patients undergoing hernia repair: A single institution retrospective study of 1066 patients. *BMC Surg*. 2021;21(1):182. Published 2021 Apr 7. Doi: 10.1186/s12893-021-01181-8.
- [4] Paaianen H, Ojala S, Virkkunen A. Incidence of occult inguinal and spigelian hernias during laparoscopy of other reasons. *Surgery*. 2006;140(1):09-13. Doi: 10.1016/j.surg.2006.01.005.
- [5] Putnis S, Wong A, Berney C. Synchronous femoral hernias diagnosed during endoscopic inguinal hernia repair. *Surg Endosc*. 2011;25(12):3752-54. Doi: 10.1007/s00464-011-1781.
- [6] Dulucq JL, Wintringer P, Mahajna A. Occult hernias detected by laparoscopic totally extra-peritoneal inguinal hernia repair: A prospective study. *Hernia*. 2011;15(4):399-402. Doi: 10.1007/s10029-011-0795-z.
- [7] Old OJ, Kulkarni SR, Hardy TJ, Slim FJ, Emerson LG, Bulbulia RA, et al. Incidental non inguinal hernias in totally extra-peritoneal hernia repair. *Ann R Coll Surg Engl*. 2015;97(2):120-24. Doi: 10.1308/003588414X14055925058959.
- [8] Henriksen NA, Thorup J, Jorgensen LN. Unsuspected femoral hernia in patients with a preoperative diagnosis of recurrent inguinal hernia. *Hernia*. 2012;16(4):381-85. Doi: 10.1007/s10029-012-0924-3.
- [9] Bialecki J, Pyda P, Antkowiak R, Domoslawski P. Unsuspected femoral hernias diagnosed during endoscopic inguinal hernia repair. *Adv Clin Exp Med*. 2021;30(2):135-38. Doi: 10.17219/acem/130357.
- [10] Manoharan V, Joshi AS. Occult hernia: Role of laparoscopy in detecting the unseen. *Int Surg J*. 2023;10:97-104.
- [11] Eklund A, Montgomery A, Bergkvist L, Rudberg C; Swedish Multicentre Trial of Inguinal Hernia Repair by Laparoscopy (SMIL) study group. Chronic pain 5 years after randomized comparison of laparoscopic and Lichtenstein inguinal hernia repair. *Br J Surg*. 2010;97(4):600-08. Doi: 10.1002/bjs.6904.

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