Leiomyosarcoma of the inguinal canal

R Patel, P Chana, J Armstrong, R Lawrence

Great Western Hospitals NHS Foundation Trust, UK

ABSTRACT

We describe a rare case of a leiomyosarcoma in the inguinal canal in a patient presenting clinically with an inguinal hernia. The clinical details, histological findings and surgical management are reviewed.

KEYWORDS

Leiomyosarcoma – Inguinal canal – Inguinal hernia

Accepted 1 November 2013; published online XXX

CORRESPONDENCE TO

Ronak Patel, E: ronak_patel@hotmail.com

Case History

A 59-year-old man presented with a 3-month history of left-sided groin swelling. He had a background of type 1 diabetes, hypertension and hypothyroidism. The swelling was irreducible and involved the scrotum. Ultrasonography showed normal testes and a large left-sided hernia containing fat. Clinically, the swelling was felt to be an inguinoscrotal hernia, which was confirmed on ultrasonography, and he was therefore listed for an open mesh repair.

Intraoperatively, on opening of the inguinal canal, a discrete soft tissue mass and lymph node were found in the upper scrotum. The mass was smooth and had a vascular pedicle, and was queried to be a primitive testicle. However, this did not seem to be the case on incision of the mass and it was excised, along with the lymph node and a lipoma of the left inguinal cord, and sent for histology. The patient made an uneventful postoperative recovery and his wound healed well with no significant residual swelling.

Histopathology

Macroscopically, the excised mass from the first operation was a smooth, tan brown nodule, weighing 31g and measuring 56mm × 37mm × 30mm. On microscopic examination, the mass was composed of fascicles of spindle cells with enlarged nuclei, which exhibited a high mitotic rate (Fig 1). The mass merged into adjacent fibrous connective tissue, and was present in the excised lymph node and lipoma.

Immunohistochemistry of the mass and lymph node demonstrated staining with smooth muscle actin, desmin (Fig 2), CD68 and vimentin. CD34 staining was also present in the mass but absent in the lymph node.

Appearances were in keeping with a grade 2 leiomyosarcoma. Histology of the wide excision of the left inguinal region and orchidectomy showed a tiny focus of residual leiomyosarcoma in the central part of the excised specimen with a negative margin.

Postoperative course

Postoperative magnetic resonance imaging (MRI) of the pelvis and computed tomography (CT) of the chest, abdomen and pelvis were clear other than a small seroma. There was no evidence of locoregional or distant metastatic disease.

The patient was referred to a tertiary soft tissue centre and underwent fludeoxyglucose positron emission tomography of the whole body, which was clear apart from normal postoperative changes. He was then admitted electively for wide excision of the soft tissue of the inguinal canal. At laparoscopy, the mesh from previous surgery was visible at the internal ring but there was no evidence of peritoneal disease. The left inguinal hernia scar was re-opened with a wide excision of scar tissue to the inguinal ligament and a left orchidectomy down to include the deep inguinal ring. His postoperative course was unremarkable. Follow-up MRI at three months showed no recurrence of the tumour.

Discussion

Leiomyosarcomas occur when smooth muscle cells or multipotential mesenchymal cells undergo neoplastic transformation. The clinical course of these lesions is related to their site, grade and stage,¹ and they account for 5–10% of soft tissue sarcomas.² Paratesticular leiomyosarcoma is an extremely rare tumour originating from the spermatic cord most commonly and the scrotum or the epididymis least commonly.³

Preoperative diagnosis of these leiomyosarcomas is difficult. Unsurprisingly, clinicians do not usually consider inguinoscrotal lumps to be underlying sarcomas owing to the relative lack of prevalence compared with hernias. Our case highlights the importance of being aware of such lesions when patients present with lumps in this region. Clinically, they present as a painless, firm paratesticular

Figure 1 Haematoxylin and eosin stain (400× magnification): There are plump pleomorphic spindle cells arranged in fascicles. They have prominent nucleoli and show mitotic activity (arrow). This supports the diagnosis of malignancy.

Figure 2 Immunohistochemical staining (200× magnification): There is variable but clear membrane staining with desmin (arrow), supporting the diagnosis of a leiomyosarcoma.

mass.⁵ Preoperative ultrasonography of an inguinal lump is useful and should be extended to the scrotal region to reveal the relation to the testis. However, even if a discrete lump is identified preoperatively, diagnosis is usually not made until histological analysis.

It is also important to be aware of routes of spread of these lesions so that a patient is investigated appropriately. The most common mode is lymphatic spread, followed by haematogenous and then local invasion.⁵ Lymph nodes and lung fields (for haematogenous spread) are investigated with CT and local invasion can be explored with MRI.

Radical orchidectomy with high ligation of the spermatic cord is believed widely to be the treatment of choice.⁴ This can be followed up with adjuvant radiotherapy to improve local recurrence rates. In our case, histology showed negative margins and postoperative radiotherapy was not deemed necessary.

Conclusions

Leiomyosarcoma is a rare cause of lumps presenting as an inguinal hernia. However, it should be considered as a differential diagnosis for hard lumps found in the cord. Radical orchidectomy and radiotherapy are preferred options for treatment and prevention of recurrence.

References

1. Kyratzi I, Lolis E, Antypa E *et al*. Imaging features of a huge spermatic cord leiomyosarcoma: review of the literature. *World J Radiol* 2011; **3**: 114–119.
2. Weiss SW, Goldblum JR. *Enzinger and Weiss's Soft Tissue Tumors*. 5th edn. St Louis, MO: Mosby; 2001. p545.
3. Dangle P, Basavarai DR, Bhattarai S *et al*. Leiomyosarcoma of the spermatic cord: case report and literature review. *Can Urol Assoc J* 2007; **1**: 55–58.
4. Rodríguez D, Olumi AF. Management of spermatic cord tumors: a rare urologic malignancy. *Ther Adv Urol* 2012; **4**: 325–334.