CASE REPORT

Massive seminoma presenting with inguinal lymph node metastases only

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Abstract

Seminomatous germ cell tumours characteristically affect men in their second-to-fourth decades, presenting as a testicular mass. Metastases when present are usually seen in para-aortic lymph nodes. These tumours are difficult to diagnose clinically and histologically when the presentation is unusual. We describe a seminoma presenting in a 61-year-old male as an inguinal mass with associated lymphadenopathy resembling lymphoma. Past medical history included ipsilateral cryptorchidism and orchidopexy. The tumour responded well to conventional chemotherapy.

This case illustrates a possible diagnostic pitfall and that germ cell tumours should be included in the differential diagnosis of tumours presenting in the groin.

INTRODUCTION

Testicular tumours account for approximately 1% of all malignancies in men [1]. Up to 95% of testicular tumours are germ cell tumours (GCTs), which are subdivided into seminomatous and non-seminomatous tumours [2]. Histologically, seminomas may be further divided into three subtypes: classic, anaplastic and spermatocytic. Pure seminomas do not produce a specific tumour marker subset, but by definition have low levels of alpha-fetoprotein (AFP) and can have normal or mildly elevated beta-HCG (beta-subunit of human chorionic gonadotropin) [3]. Risk factors for the development of GCTs include cryptorchidism, Klinefelter’s syndrome and testicular dysgenesis [4]. Testicular tumours commonly metastasize along gonadal vessels to the retroperitoneal lymph nodes [5]. Inguinal metastasis from a testicular seminoma is rare and likely related to previous inguinal or scrotal surgery causing disruption in normal lymphatic drainage [6]. We report a case of a massive seminoma presenting with primary inguinal lymph node metastasis in the absence of retroperitoneal lymphatic spread.

CASE REPORT

A 61-year-old retired Caucasian male, presented with minor bleeding from a large, painless, right inguinoscrotal mass. The mass had been slowly growing over a 10–12 months period with intermittent episodes of bleeding from a central area of ulceration. He was able to pass urine and faeces normally and had not experienced haematuria. On admission, he reported
associated increasing right leg swelling and 3 kg weight loss in the preceding 2–4 weeks. His past medical history was consistent with cryptorchidism that was repaired with a right orchiopexy at the age of 10 years. He had a 25 pack year tobacco smoking history and consumed minimal alcohol. He was a widower and lived alone, being otherwise fit and independent. On examination, a large, superficially necrotic, right inguinoscrotal mass was visible (Fig. 1a and b).

Subsequent contrast enhanced computed tomography (CT) of the abdomen and pelvis (Fig. 2a and b) revealed a large 21 × 17 × 17 cm³ predominantly solid, irregular mass centred on the right inguinal region extending into the scrotum with no pathological pelvic or retroperitoneal lymph nodes. The lesion was contiguous with the right external iliac nodes and a secondary left inguinal mass was noted, considered likely to represent nodal conglomerate. Tumour markers during admission measured AFP 6 μg/L, beta-HCG 67 IU/L and lactate dehydrogenase (LDH) 655 IU/L. An ultrasound-guided biopsy was performed, which was diagnostic of a seminoma (Fig. 3a and b). Following case discussion at the GCT multi-disciplinary team meeting it was concluded that treatment should include a chemotherapy-based regime for a PT4N3M0S2 testicular seminoma followed by surgery.

Prior to starting treatment he represented with another episode of bleeding from the mass, which was managed conservatively. CT thorax performed during this admission did not identify any metastatic lesions. He underwent four cycles of EP (Etoposide, Cisplatin) chemotherapy (BEP without bleomycin due to emphysema). A repeat CT abdomen and pelvis showed a good response to chemotherapy with a significant reduction in size of the inguinoscrotal mass to 10.3 × 6.4 cm with reduced bilateral inguinal lymphadenopathy and still no evidence of retroperitoneal lymphadenopathy (Fig. 4). Tumour markers at this stage measured AFP = 6 μg/L, beta-HCG < 2 IU/L and LDH = 200 IU/L.

Post-chemotherapy he underwent a right inguinal orchidectomy, pelvic lymph node excision and skin flap. During the operation a right testicular mass was noted extending through the cord on to the external iliac vessels at the deep ring. The excision specimen showed no discrete scrotal structures and multiple nodules within the subcutaneous tissue (Fig. 5a and b). These nodules, demonstrated by immunostaining, were consistent with necrotic GCT. No viable tumour was seen.

**DISCUSSION**

Testicular tumours account for approximately 1% of all malignancies in men, and they are the most common solid malignancy that affect males between 15 and 35 years old [2]. Up to 95% of testicular cancers are GCTs and the most common site for metastatic spread is the retroperitoneal lymph nodes. Inguinal lymph node metastasis is a rare occurrence and may be secondary to retrograde extension from significant retroperitoneal metastatic burden [5]. Primary involvement of inguinal nodes may be due to direct tumour invasion into the epididymis, breaching the scrotal wall or extension towards the vas
deferens [7]. The large size of the tumour in our case suggests it is highly likely inguinal node involvement was via this route. However, inguinal metastases have been reported in up to 10% of patients with a testicular tumour who have previously undergone orchidopexy or scrotal surgery [8]. It has been suggested that previous inguinal or scrotal surgery may lead to alteration in the usual patterns of lymphatic drainage. In our case, the history of orchidopexy for cryptorchidism could have been a significant factor for the absence of retroperitoneal lymphadenopathy despite the significant tumour burden at presentation. The overall risk of developing testicular cancer is greater in patients with previous cryptorchidism, occurring in 10% of GCTs [9]. Our case suggests that patients who have previously undergone inguinal or scrotal surgery may have alterations in normal lymphatic drainage leading to rare and atypical presentation of metastatic disease despite high tumour burden.

Ultimately, inguinal lymph node metastasis is a rare direction of spread for seminomatous GCTs. It may be secondary to direct extension of the tumour or alteration in the lymphatic drainage after previous inguinal or scrotal surgery. Although retroperitoneal lymph nodes are the most common site of metastasis in GCTs, alternative directions of spread should be considered in those patients who have undergone previous orchidopexy. Extensive imaging beyond CT for initial evaluation of retroperitoneal lymphadenopathy is unnecessary.

**AUTHOR CONTRIBUTIONS**
All authors helped in writing the article. Norton B. supplied the clinical images. Sandison A. supplied the histopathology images. All authors have read and approved the final article.

**INFORMED CONSENT STATEMENT**
Written informed consent was collected from the patient authorizing the use and disclosure of their protected health information.

**CONFLICT OF INTEREST STATEMENT**
All the authors have no conflicts of interests to declare.

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