CASE REPORT

Primary clear cell carcinoma of the rete testis: 1st report

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SUMMARY

Primary tumours of the rete testis, either benign or malignant, are very rare. Such lesions require careful scrutiny including immunohistochemical analysis to exclude malignant lesions such as mesothelioma or papillary serous carcinoma. To the best of our knowledge this is the first report of a primary clear cell carcinoma of the rete testis. The possibility of a primary renal cell carcinoma or other primary site with metastatic

spread to rete testis was excluded by thorough clinical and radiological work-up.

BACKGROUND

This is the first report of a primary clear cell carcinoma of the rete testis.

Figure 1 Left lower pole testicular tumour extending into the rete testis (A). The tumour shows clear cell cytoplasm (B, H&E $\times 40$) and prominent psammomatous calcification (C, H&E $\times 40$). Immunohistochemical staining was positive for cytokeratin 7 (D, $\times 40$) CD10 (E, $\times 40$) and renal cell carcinoma marker (F, RCC Ma, $\times 40$).

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CASE PRESENTATION

A 68-year-old man presented with a 1-year history of left scrotal swelling and discomfort for 1 month. Examination revealed a firm irregular left testis mass consistent with tumour.

INVESTIGATIONS

Scrotal ultrasound reported a 2 cm multicystic lesion mid lower pole in the rete testis with heterogenous appearance. Right testis was normal (figure 1). Serum tumour markers, α fetoprotein and β human chorionic gonadotropin and lactate dehydrogenase were normal. Radical orchidectomy was performed. A post-operative CT scan thorax, abdomen and pelvis (CT TAP) was normal, in particular there was no evidence of nodal or visceral metastatic disease typical of testis tumour.

DIFFERENTIAL DIAGNOSIS

- ▶ Primary germ cell tumour of the testis
- ▶ Metastatic renal cell carcinoma
- ▶ Leydig cell tumours
- ▶ Sertoli cell tumours
- ▶ Granulosa cell tumours
- ▶ Benign and malignant paratesticular tumours.

TREATMENT

- ▶ Radical orchidectomy
- ▶ Clinical and radiological surveillance

OUTCOME AND FOLLOW-UP

Clinical examination and surveillance positron emission tomography (PET) CT TAP at 6 months and 1 year were normal with no evidence metastatic disease.

DISCUSSION

Primary tumours of the rete testis, either benign or malignant, are very rare. Such lesions require careful scrutiny including immunohistochemical analysis to exclude malignant lesions such as mesothelioma or papillary serous carcinoma. Historically previous cases reported as primary rete testis tumours may have been metastatic carcinoma from elsewhere.¹ To the best of our knowledge this is the first report of a primary clear cell carcinoma of the rete testis. The possibility of a primary renal cell carcinoma or other primary site with metastatic spread to rete testis was excluded by thorough clinical and radiological work-up.

Metastatic carcinoma of the testis may present a diagnostic challenge as they often lack a history of primary tumour, are usually solitary and unilateral and may have deceptive patterns that suggest primary tumours.² In a series of 26 patients with metastatic foci to the testis, Ulbright and Young² report four cases of renal cell carcinoma that presented clinically as isolated testicular tumours. However, all four patients were identified as having subsequent synchronous renal masses on abdominal CT emphasising the need for careful and thorough exclusion of a synchronous primary with CT TAP.

Interestingly, a case report by Musser *et al*³ reported a patient with primary adenocarcinoma of the rete testis that had delayed diagnosis of metastatic spread on conventional CT imaging by 10 months in comparison to PET CT. They reported that PET CT improved accurate staging and may prevent erroneous diagnosis of primary rete testis tumours from metastatic disease. In this case the patient showed no evidence of a synchronous

primary or development of metastatic disease with serial PET CT imaging. PET CT has increasingly been implemented in the diagnosis and monitoring of RCC.⁴ Furthermore, PET CT has been shown to be invaluable in monitoring progression of local and metastatic RCC and been shown to be more accurate than conventional CT imaging.^{5 6}

Patient's perspective

I have been diagnosed with a very rare testicular tumour which has not been reported before. The prognosis and exact nature of follow-up is uncertain, but to date I am totally clear of cancer as my positron emission tomography scans have indicated.

Learning points

- ▶ Despite the above difficulties in diagnosis, primary carcinoma of the rete testis even though very rare is reported in over 30 cases within the literature.¹
- ▶ Adenocarcinoma of the rete testis is also rare with only 60 cases documented and is associated with dismal average survival of 8 months.^{1 7 8}
- ▶ Strict criteria for histological diagnosis have been reported and revised by Nocomovitz and Orenstein⁷ which are fulfilled in the current case. Both extensive clinical and radiological follow-up including positron emission tomography CT have not revealed either a primary or metastatic foci.
- ▶ To the best of our knowledge, this is the first report of primary clear cell carcinoma of the rete testis.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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