Testicular metastasis of colorectal carcinoma: an unusual presentation

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SUMMARY

Metastasis of colorectal carcinoma to testis is rare. The authors report a case of 35-year-old man with right testicular mass. Contrast-enhanced CT scan (CECT) of testes showed testicular mass with ascitis and enlargement of retroperitoneal lymphnodes. Thus, a provisional diagnosis of disseminated primary testicular tumour was made. On subsequent high orchidectomy pathological examination revealed mucinous adenocarcinoma with CDX2 positivity thereby suggesting the possibility of metastasis from adenocarcinoma. Further, the diagnostic evaluation revealed a colorectal mass, which was inoperable (stage IV) and found to be primary colorectal mucinous adenocarcinoma. The authors conclude that occult colorectal carcinoma may rarely metastasise to testis and this unusual presentation may produce diagnostic dilemma. Although rare, metastases to testes should be considered as a differential diagnosis, especially where symptoms are unusual for primary malignancy.

BACKGROUND

Colorectal tumours metastasise to numerous sites especially liver, lungs, bones, adrenals, brain, etc, but testicular metastases are rare. Metastasis to testis from non-lymphomatous cancer usually occurs in conjunction with diffuse metastatic disease.¹⁻⁵ The most common primary is prostatic carcinoma.^{1 2} Prevalence of testicular metastasis from colon cancer has been approximately 8% of all testicular metastatic lesions.^{1 6} Other tumours reported to metastasise to testis are: lung, melanoma, colon,

kidney, stomach and pancreas. Haupt *et al* have studied testicular metastasis in 127 patients and have suggested that testicular tumour in older patients with extensive lymphatic and vascular invasion, interstitial pattern, sparing of seminiferous tubules, is suggestive of metastasis as opposed to primary testicular tumour.⁷ We report a case of testis metastasis from an occult colorectal adenocarcinoma associated with a massive spread, occurring as a first clinical manifestation.

CASE PRESENTATION

A 35-year-old man presented with testicular mass and ascitis for 4 months. Other systemic examination was within normal limits.

INVESTIGATIONS

His chest x-ray, α -fetoprotein (AFP) and β -human chorionic gonadotropin (HCG) levels were normal. Contrast-enhanced CT (CECT) scan of testis revealed heterogeneously enhancing soft tissue attenuation lesion involving the right testis with multiple calcification, hydrocele and thickening of spermatic cord with gross ascitis and multiple calcified lymph nodes along the bilateral internal iliac group (figure 1A,B).

DIFFERENTIAL DIAGNOSIS

Thus, a provisional diagnosis of disseminated testicular neoplasm was kept.

Figure 1 (A) CT scan showing right testicular mass (B) CECT abdomen showing rectal mass projecting inside lumen.

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Figure 2 Gross appearance of testicular mass showing bluish-white mucin-filled areas (marked by arrow).

TREATMENT

Thus, a high orchidectomy was planned and the sample was sent for histopathology. The gross appearance of testicular mass showed bluish-white mucin-filled areas (figure 2). Histopathology revealed mucinous adenocarcinoma (figures 3 and 4) with CDX2 positivity in immunohistochemistry (figure 5) thereby suggesting the possibility of metastatic carcinoma of testis with possible origin from gastrointestinal tract. On the basis of this unexpected pathological finding, a further diagnostic work-up was done. This included ultrasonography and CECT of the abdomen and pelvis, gastroduodendoscopy, colonoscopy, etc. CECT of abdomen and pelvis revealed exophytic colorectal mass involving anterior wall with calcification along with ascitis and lymph nodes. Proctoscopy-guided colonic biopsy was consistent with mucinous adenocarcinoma. Thus, a final diagnosis of colorectal mucinous adenocarcinoma (stage IV) with secondaries in testis was made.

Figure 3 Microphotograph showing tumour with extensive extracellular mucin (marked by arrow) and normal appearing testicular parenchyma present at the periphery (H&E ×100).

Figure 4 Microphotograph showing tumour cells forming tubules (H&E ×400).

OUTCOME AND FOLLOW-UP

The patient was kept on chemotherapy but was lost on subsequent follow-up after receiving three cycles of chemotherapy.

DISCUSSION

Testicular metastases of colon cancer occur rarely, and isolated spread to the testicle, being the first symptom of illness, is even rarer. In this case the primary and the only symptom of colonic cancer was metastasis to the testis. Similar clinical cases have been documented by Meacham *et al*,¹ Polychronidis *et al*⁵ and Tiong *et al*.² Brayan *et al*⁸ have analysed 11 reports on the testicular metastases of colon cancer. Patient age ranged from 18 to 76 years (mean 51). Majority of cases of metastases to the testicle had simultaneous tumour dissemination to other organs as well. In three cases however, the testicular tumour was the first manifestation of illness. Haupt *et al*⁷ have examined 127 reports of heterogeneous testicular metastases and concluded that the following cancers metastasised to the testicle: prostate cancer (n=45), lung cancer (n=25), malignant melanoma

Figure 5 Immunohistochemistry of tumour cells showing CDX2 positivity (×100).

(n=12), colon cancer (n=11) and renal carcinoma (n=10). Testicular metastases were bilateral in 15% of the cases. The average age of patients with testicular spread was higher than in cases of germ cell tumours.⁷ Prognosis of these patients is poor. Common primary tumours metastasising to the testicle include prostate (35%), lung (18%), melanoma (11%) and kidney (9%).¹ Testicular metastasis from colorectal carcinoma is extremely rare. Most cases present with testicular swelling or hydrocele. The exact mechanism of testicular metastasis from colorectal carcinoma remains unknown. Several theories regarding this include: (1) retrograde venous extension or embolism, (2) retrograde lymphatic extension, (3) arterial embolisation and (4) direct tumour invasion. Lower temperatures in the scrotum creating an unfavourable environment for the seeding of the metastatic cells could explain the relative rarity of testicular metastasis.⁹ In our review, most of the patients with testicular cancer of colonic origin had peritoneal disease. The median age of the patients is approximately 51 years with average survival is 6–12 months after the diagnosis. In our case the primary colorectal malignancy was occult and it presented with metastasis in the form of testicular mass and disseminated abdominal disease. This was quite unusual presentation where light microscopy and immunohistochemistry helped to reach the correct diagnosis.

Competing interests None.

Patient consent Obtained.

Provenance and peer review None.

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Learning points

To summarise, there are several clinically interesting aspects in this case.

- ▶ Testicular metastatic disease is uncommon, particularly from colorectal cancer.
- ▶ Most patients with metastases to testis present with advanced disease, with poor prognosis. High index of suspicion, microscopy, immunohistochemistry and newer technologies, permit early diagnosis of metastases from unusual locations.
- ▶ Surgical treatment and chemotherapy therapy is necessary for long-term survival.
- ▶ Although metastases to the testes are rare, they should be considered in clinical practice, especially where symptoms are unusual for primary malignancy. Immunohistochemistry and other newer modalities may help to localise the primary site.

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