

## Painful malignant embryonal carcinoma of the testis

### 疼痛的惡性胚胎睪丸癌

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Patients with clinically palpable testicular nodule, regardless of absence or accompanying symptom of pain, require further evaluation. Testicular carcinoma including embryonal carcinoma has varied appearances and the diagnosis can be difficult unless there is presence of local infiltration or distant metastatic deposits. Ultrasound examination is the imaging modality of choice to quickly confirm the clinical findings of testicular mass at the Emergency Department and distinguish a testicular mass from an extra-testicular mass and extent of the disease. Despite presentations in varying stages of disease, the treatment will include orchiectomy. (*Hong Kong j.emerg.med.* 2006;13:175-177)

病人若有臨床上可觸摸到的睪丸小瘤，則不論有否伴隨著痛楚徵狀，都需要進一步的評估。睪丸癌（包括胚胎性癌）有不同的特徵，除非已有局部滲透或遠處擴散轉移，否則診斷可以是十分困難。急症室應選用超聲波檢查的造影方式快速確定睪丸腫塊的臨床結果，用以區別睪丸內腫塊或睪丸外腫塊，及疾病的程度。儘管會呈現不同病程階段，治療則包括睪丸切除術。

**Keywords:** Embryonal carcinoma, orchiectomy, testis, ultrasonography

**關鍵詞：**胚胎性癌、睪丸切除術、睪丸、超聲波造影術

### Case Summary

A 25-year-old male presented with a mildly painful right testicular swelling of two months' duration in 2004. There was no history of trauma or fever. Clinically, the right testis demonstrated a palpable nodule. Ultrasound study revealed a lobulated 2.7 cm hypoechoic nodule closely abutting the tunica albuginea (Figure 1). There was prominent vascular flow found within and along the medial margins

(Figure 2). There was no associated hydrocoele. The patient subsequently had orchiectomy and post-operative recovery was uneventful.

Histopathology revealed a well-defined pale brownish firm 2-cm testicular tumour which was formed by closely packed and irregular glandular structures with areas of necrosis. The tumour cells were markedly pleomorphic and possessed large irregular nuclei with coarsely clumped chromatin and prominent nucleoli. Frequent mitosis as well as apoptosis were found. The tumour was confined within the tunica albuginea. The findings were those of an embryonal carcinoma.

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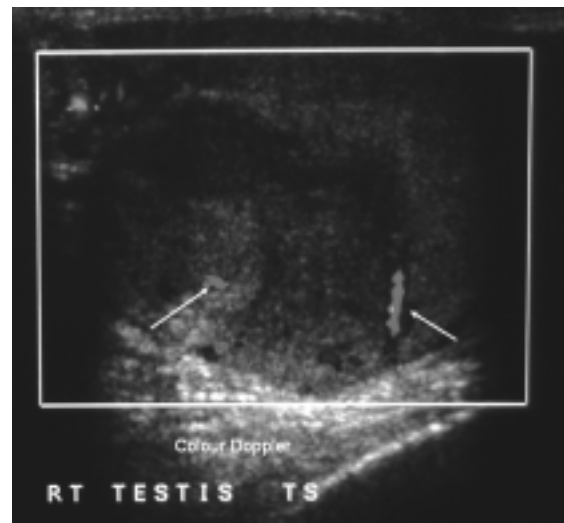
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### Discussion

Testicular carcinoma represents about 1% of all neoplasms in men and frequently occurs in the 15-34



**Figure 1.** Ultrasound of the testis demonstrating a lobulated, 2.7 cm hypoechoic nodule closely abutting the tunica albuginea.



**Figure 2.** Colour Doppler ultrasound of the testis demonstrating prominent vascular flow within as well as along the periphery of the tumour.

year age group. Primary testicular carcinomas are histologically classified as germ cell tumours and non-germ cell tumours, with 95% of them being the former which are further classified as seminomatous and non-seminomatous germ cell tumours. Non-seminomatous germ cell tumours include embryonal carcinoma which has a more variable appearance than the seminomatous form.<sup>1</sup>

Embryonal carcinoma is characterised by rapid and bulky growth, and spread via the lymphatic and haematogenous routes to distant viscera. It is commonly seen in the 22-35 age group and the patients present with an enlarged scrotum and pain. Accompanying high levels of alpha-fetoprotein and human chorionic gonadotropin tumour markers are often encountered.<sup>1</sup>

Scrotal ultrasound is a reliable modality to quickly confirm the clinical findings of testicular masses and also distinguish an intra-testicular mass from an extra-testicular mass. The majority of extra-testicular masses are benign while intra-testicular masses must be presumed malignant until proven otherwise. The patient should be in a supine position and the scrotum supported by a towel placed between the thighs. A 7-10 MHz high-frequency linear-array transducer is

used for optimal results. The testes are examined in at least two planes, along the long and transverse axes. The size and echogenicity of each testis and the epididymis are compared with those on the opposite side. In addition, the scrotal skin thickness is evaluated. Colour Doppler and pulsed Doppler parameters are optimised to display low-flow velocities, to demonstrate blood flow in the testes and the surrounding scrotal structures. Additional techniques such as use of the Valsalva manoeuvre or upright positioning can often be performed for venous evaluation.<sup>1-5</sup>

The ultrasound features for any particular kind of testicular malignancy are not very specific. However, embryonal carcinoma often appears as a large, irregular tumour with loss of the normal architectural contour of the testis. The tumour mass has a heterogeneous appearance but predominantly hypoechoic. It may exhibit frank aggressive features with infiltration of the tunica albuginea and extension into the spermatic cord structures. Areas of necrosis are seen as cystic spaces within the tumour. On occasion, areas of haemorrhage and calcification may be seen as hyperechoic foci.<sup>2,3</sup>

Colour Doppler imaging has a complementary role in the evaluation of testicular tumours which are often hypervascular in nature. Furthermore, areas of necrosis

or infarction can be easily distinguished by demonstrating the absence of vascular flow within the area.<sup>3,4</sup> In addition, the identification of strong vascular flow within the testis essentially excludes the presence of an established testicular torsion.

Computed tomography and magnetic resonance imaging are complementary examinations commonly performed to evaluate the presence of metastatic deposits beyond the scrotum, especially the retroperitoneal region.

Testicular biopsy of a suspicious lesion is not recommended due to the possibility of dissemination. Patients with limited disease are often treated with unilateral radical transinguinal orchiectomy with ligation of the spermatic cord at the inguinal ring. Orchiectomy is the definitive procedure for both

pathologic diagnosis and local control of the primary tumour.<sup>6</sup>

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