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## Wilms' tumour metastasis to the testis: long-term survival

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**Abstract** We report the case of a 3-year-old boy with a Wilms' tumour of unfavourable histology with metastatic spread to the right testis. Orchiectomy and chemotherapy led to disease-free survival for more than 8 years.

**Keywords** Wilms' tumour · Metastasis · Testis

### Introduction

Wilms' tumour (WT) metastases to the testis or epididymis are extremely rare [1, 2], with only four cases reported in the literature [3–6]. They are termed “unusual” [3]. Long-term follow-up has not been reported. To our knowledge, we describe the first case of disease-free long-term survival after testicular WT metastasis.

### Case report

A 3-year-old boy was admitted with a large, palpable mass in the upper right abdomen. Ultrasonography (US) revealed an inhomogeneous tumour of the right kidney of 13.5×8×7.8 cm. Furthermore, a right scrotal hydrocoele was described. Preoperative chemotherapy according to the SIOP No. 9 protocol with actinomycin D and vincristine was initiated. Four weeks of preoperative treatment led to impressive tumour size reduction. A tumour

nephrectomy was performed without complications. A local stage 3 tumour (pT2b pN1c pM0) of unfavourable histology (focal anaplasia) was diagnosed. Postoperative chemotherapy including actinomycin D, vincristine, doxorubicin, and ifosfamide, and local irradiation completed the adjuvant treatment.

Eleven months after completion of chemotherapy enlargement of the right testis was noted. US revealed an enlarged right testicle of inhomogeneous structure. At inguinal exploration, intraoperative frozen sections confirmed a testicular tumour metastasis. A high inguinal orchiectomy was performed. Histologically, the removed testis contained disseminated foci of an epithelial type of nephroblastoma with immature tubules (Fig. 1). Intravascular tumour spread was obvious. Furthermore, histology revealed areas of fibrous tissue and foam cells, identical with the histological appearance of the former nephrectomy specimen after preoperative chemotherapy. The epididymis and spermatic cord were free of tumour. Additional metastases were excluded by imaging. Relapse chemotherapy with etoposide and carboplatin was given and tolerated without serious toxicity. During a follow-up of 8 years and 6 months the boy was in stable, complete remission. The appearance and growth of the preserved left testis were unimpaired.

### Discussion

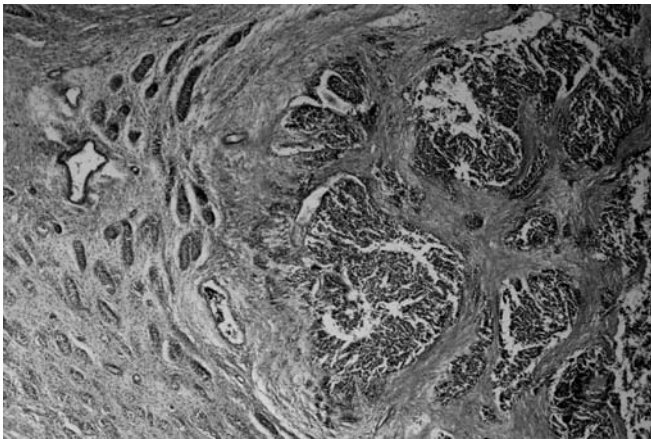
Data on the treatment of WT metastases to sites other than the lungs, liver, brain, and bone are exceedingly rare [7]. There are sporadic case reports of intrascrotal metastases from WT in the literature. In 1928, Dew described the development of a left-sided testicular metastasis after a previous nephrectomy in a 27-month-old boy [4]. An orchiectomy was performed; no adjuvant therapy was given. The boy died after several months of multiple metastases. De Camargo et al. observed a first relapse of a WT of favourable histology with metastatic spread to the left epididymis in a 5-year-old boy [3]. An orchiectomy was performed, and chemotherapy with etoposide and cisplatin was given; a second relapse to the left inguinal canal occurred. The patient was lost from a follow-up 4 months after chemotherapy, tumour excision, and irradiation.

Sauter et al. reported a case of a 13-month-old boy who developed a metastasis to the left testis after radical nephrectomy [6]. The patient underwent a high inguinal orchiectomy, adjuvant chemotherapy, and radiation

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**Fig. 1.** Metastasis separated by connective tissue from atrophic testicular tissue (H & E, low-power view)

therapy to the abdomen and left groin [6]. Another observation concerns a 3-year-old African boy with a huge WT metastasis to the right testis, far larger than the primary tumour arising from the upper pole of the right kidney [5]. In this case the renal tumour was deemed non-resectable, and the exploratory laparotomy concluded with a tumour biopsy. After a right orchiectomy adjuvant treatment was started. The outcome was not

reported. In our case, the clinical course and histological findings support the hypothesis of a primary testicular WT metastasis with incomplete response to chemotherapy. Despite a poor prognosis in children with tumours of unfavourable histology, the boy was cured.

In conclusion, a metastasis to the testis should be ruled out in children with WT. An orchiectomy in combination with adjuvant chemotherapy may be curative in patients with localised disease.

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