Metastatic tumors involving paratesticular tissues are extremely rare. To our knowledge, melanoma metastatic to paratesticular tissues has not been reported to date. Here, we report a case of widely metastatic malignant melanoma that was diagnosed after histopathologic examination of the excised paratesticular mass.

**CASE PRESENTATION**

A 50-year-old male patient initially visited the neurosurgery clinic due to low back pain. On physical examination, a subcutaneous mass was noted in the right lumbar region. The overlying skin had a deep purple color. Moreover, a right hemiscrotal painless mass extending to the inguinal region was palpated. The patient reported that the lumbar mass was congenital, and no significant change regarding size, consistency and color had been evident recently. However, the scrotal mass had progressively increased in size during the previous few months.

Spinal magnetic resonance imaging (MRI) revealed metastatic deposits in the vertebral bodies. Computed tomography (CT) of the abdomen revealed hepatic metastatic nodules and pathologically enlarged lymph nodes. A CT scan localized the subcutaneous protuberant soft tissue mass, measuring $5 \times 7$ cm in diameter, in the right lumbar region. Since the mass was congenital and had not recently increased in size, it was neither excised nor biopsied. The relationship between the paratesticular mass ($9$ cm in greatest dimension) and the right testis was not clear on CT imaging (Figure 1). Upon these findings, Tru-cut biopsy specimens were obtained from hepatic metastatic nodules and the T12 vertebral body. Pathologic analysis of the hepatic biopsy specimen revealed metastasis of a carcinoma. The primary site could not be identified based on histopathologic data. Osseous findings were nonspecific and inadequate for a particular diagnosis. The blood chemistry profile was normal with
serum tumor markers (α-fetoprotein, human chorionic gonadotropin) being within the normal range.

The patient was referred to our clinic due to his right scrotal mass. Imaging studies were inconclusive about the nature of the mass and its relationship with testicular tissue. Therefore, we decided to perform surgical exploration. On surgical exploration, the highly vascular paratesticular mass was found to be separated from the right testis with a poorly defined pseudocapsule. Moreover, numerous satellite lesions of smaller size, but similar vascularity, were located in the inguinal region. These satellite lesions, extending caudally, were probably related to the giant subcutaneous lumbar mass. We performed a right radical orchiectomy and excised the paratesticular mass by an inguinal incision. The mass, weighing 760 g, was localized to paratesticular tissues on both macroscopic and microscopic examination (Figure 2A). The testis and epididymis were free of tumoral infiltration. However, microscopic tumoral invasion was evident in the spermatic cord and tunica vaginalis. Tumoral cells were pigmented and highly pleomorphic. Immunohistochemical staining with S100, HMB-45 and melan-A confirmed the diagnosis of malignant melanoma (Figure 2B). Hepatic biopsy specimens were then reevaluated with the same immunohistochemical panel. The immunohistochemical profile was almost the same in the hepatic biopsy specimens. Although negative for S100, immunopositivity for HMB-45 and melan-A confirmed the diagnosis of malignant melanoma. Upon these findings, it was concluded that the hepatic lesions were metastatic deposits of malignant melanoma.

After an uneventful postoperative period, the patient was discharged from hospital on the second day. He was referred to the oncology department for adjuvant treatment. Oncologists initiated a 3-month course of dacarbazine treatment. The patient died during the third month of chemotherapy, before completion of the first cycle.

**DISCUSSION**

Intrascrotal tumors can be testicular or paratesticular in origin. Although most paratesticular masses are benign in nature, 30% of such tumors are malignant [1–4]. Differential diagnoses of malignant paratesticular masses primarily include liposarcoma, rhabdomyosarcoma.
and leiomyosarcoma. Identifying the origin of these masses necessitates additional evaluation that typically consists of an imaging study and serum tumor markers. Clinical and radiologic findings may resemble testicular tumors and yield inconclusive findings about the nature and biological behavior of such masses. Therefore, surgical exploration may eventually be necessary in the majority of cases. Definitive diagnosis is made by histopathologic examination of the excised specimen.

Metastatic tumors of the testes and paratesticular tissues are relatively uncommon. Tumors metastasizing to the testis comprise 1% of all testis tumors [1]. The tumors most commonly reported to metastasize to the testis are prostate, lung, melanoma, colon, kidney, stomach and pancreas tumors. In about 15% of cases, these are metastases of malignant melanomas [2–3]. There are about 30 reports of such cases in the literature [1–4]. Most metastatic melanomas metastasizing to the testis have been incidentally found at autopsy in patients with widespread malignant melanoma [5]. In only four of the previously described cases of testicular metastases were the first manifestation of a malignant melanoma [6]. For primary tumors outside the abdominal or pelvic cavities, the arterial routes appear most likely, although metastatic involvement of intra-abdominal organs or lymph nodes may lead to testicular or paratesticular involvement by retrograde invasion through veins or lymph vessels [1–3,7]. Purely paratesticular metastatic deposits are extremely rare with only a few cases, such as renal cell carcinoma, Wilm’s tumor and pancreatic cancer metastasizing to the paratesticular space, having been reported so far [8,9].

Melanoma is a malignant melanocytic tumor arising in pigmented areas. Melanomas represent 3% of all cancers (excluding non-melanoma skin cancer) and 1–2% of all cancer deaths [10]. The probability of metastasis may be predicted by measuring the depth of invasion of the vertical growth phase. Metastasis involves not only regional lymph nodes, but also liver, lungs, brain and virtually any other site that can be seeded by the hematogenous route [7]. A review of 100 autopsy studies of patients dying of metastatic melanoma showed an autopsy incidence of occult metastases to organs of the genitourinary system comparable to that of other viscera [5]. The most frequent sites of occult genitourinary melanoma metastases are the adrenals (38%), kidneys (34%), and bladder (14%), with testicular involvement to a lesser extent (6%) [5].

Initial presentation of occult nongonadal malignancy as a clinically apparent testicular mass is rare. A literature review indicated no previously reported cases of melanoma with the testicle as the presenting metastatic site. Moreover, to our knowledge, this is the first case of metastatic malignant melanoma involving paratesticular tissues. This widely metastatic disease was identified based on histopathologic examination of the excised mass. Once a testicular tumor is discovered to be a metastasis of malignant melanoma, the prognosis is very poor regardless of the treatment modality. Chemotherapy (dacarbazine or the nitrosureas carmustine and lomustine) and immunotherapy with the bacille Calmette-Guerin vaccine or interleukin-2 represent the current treatment options for metastatic disease. In metastatic testicular melanoma, the life expectancy after orchiectomy ranged from 2 to 14 months [5]. Our patient survived for only 3 months after the operation, despite the initiation of chemotherapy.

In our case, imaging studies were inconclusive as to the nature of the mass and its relationship with testicular tissue. Therefore, we decided to perform surgical exploration. It was found that the mass was paratesticular in origin. Moreover, histopathologic examination of the excised mass explained the whole picture, and the patient received adjuvant treatment accordingly.

To sum up, paratesticular metastasis of melanoma is an extremely rare condition. Our case was unique because the melanoma was widely metastatic and primarily involved paratesticular tissues without any invasion of the testis and epididymis. However, prognosis is not expected to be better than that of testicular metastasis due to widely systemic disease and late presentation.

**References**