Hemangioma of The Lumbar Sympathetic Ganglion

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Hemangioma is one of the most common soft tissue tumors (7% of all benign tumors) and the most common tumor of infancy and childhood (1). The majority of hemangiomas are superficial lesions that have a predilection for the head and neck region, but they may also occur internally, notably in organs such as the liver (2). Hemangiomas arising within the confines of the epineurium are extremely rare tumors, and of the few cases described in the literature several are probably unacceptable because they appear to involve nerve secondarily (3). In the following case report, we present an additional rare form of hemangioma that involved the lumbar sympathetic ganglion.

Table 1. The site, age, sex and surgical treatment of 16 cases

<table>
<thead>
<tr>
<th>Patient</th>
<th>Source</th>
<th>Involved nerve</th>
<th>Age, y/sex</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Wood, (9) 1980</td>
<td>Peroneal</td>
<td>13/F</td>
<td>Inrafascicular dissection and en bloc resection</td>
</tr>
<tr>
<td>2.</td>
<td>Bilge et al, (10) 1989</td>
<td>Peroneal</td>
<td>10/M</td>
<td>Inrafascicular dissection and en bloc resection</td>
</tr>
<tr>
<td>4.</td>
<td>Kojima et al, (6) 1976</td>
<td>Median</td>
<td>19/F</td>
<td>Resection of type</td>
</tr>
<tr>
<td>5.</td>
<td>Patel et al, (12) 1986</td>
<td>Median</td>
<td>4/F</td>
<td>Multiple excisions</td>
</tr>
<tr>
<td>6.</td>
<td>Patel et al, (12) 1986</td>
<td>Median</td>
<td>15/F</td>
<td>Recurrence at 2y after intraneural dissection; patient then had resection with sural nerve graft.</td>
</tr>
<tr>
<td>7.</td>
<td>Peled et al, (13) 1980</td>
<td>Median</td>
<td>16/F</td>
<td>Partial excision; 3y later, patient underwent intraneural dissection and en bloc resection</td>
</tr>
<tr>
<td>8.</td>
<td>Sato, (8) 1913</td>
<td>Median</td>
<td>64/M</td>
<td>Resection of tumor with involved nerve segment</td>
</tr>
<tr>
<td>9.</td>
<td>Kon and Vuursteen (14) 1980</td>
<td>Digital</td>
<td>8/F</td>
<td>Excision, re-exploration 2y later with dissection and sural nerve graft</td>
</tr>
<tr>
<td>11.</td>
<td>Kline and Moore, (16) 1992</td>
<td>Ulnar</td>
<td>63/M</td>
<td>Epineurotomy with cubital tunnel release</td>
</tr>
<tr>
<td>12.</td>
<td>Linde and Gaab (17) 1982</td>
<td>Ulnar</td>
<td>16/M</td>
<td>Microsurgical resection</td>
</tr>
<tr>
<td>15.</td>
<td>Vigna Pa et al, (5) 1994</td>
<td>Posterior tibial nerve</td>
<td>22/F</td>
<td>Local surgical excision</td>
</tr>
</tbody>
</table>
Case Report

The patient was born in 1960, a 32 year-old man, and had a pain continuously occurring at the lower extremity during in the daytime for about one year. In addition, the patient complaining about a not healing wound and feeling cold at the distal part of the toes of each foot went to the Department of Cardiovascular Surgery, on 31 November 1992. The patient smoking thirty cigarettes a day for fifteen years was operated for appendectomy ten years ago. However, he had no significant medical history about skin or mucous membrane lesions and neuromuscular deficits.

The patient having these complaints was diagnosed as tromboangiitis obliterans, and operated on bilateral lumbar sympatectomy in February, 1992. After the operation, the patient got well and had no any symptoms.

Pathologic Findings

Macroscopically, the mass was sent as two different tissue parts. The first material, including one part tissue in, measured 0.7x0.6x0.5 cm, medium firm, showing reddish-brown and having spongy appearance on the surface, was right sympatetic ganglia. The second one, including two parts tissue in, measured 0.7x0.5x0.5 cm, medium firm, grayish and the shape of spindle, was left sympatetic ganglia.

Routine hematoxylin-eosin stained, formalin fixed 5 micron tissue sections showed a cavernous hemangioma that involved the right lumbar sympathetic ganglion. The dilated tumoral vessels involved the sympathetic ganglion. The tumor endothelial-lining cells were inconspicuous, flat, and devoid of atypia or mitoses (Fig. 1). Vessel walls were generally thin, but occasional tufting and thickening

Figure 1. The dilated tumoral vessels within sympathetic ganglion (Hematoxylin-Eosin, x16).

Figure 2. Mild thickening of the vessel walls and ganglia cells (Hematoxylin-Eosin, x82).
were identified (Fig. 2). The adjacent nerve bundles and ganglia were histologically normal although they were separated by the dilated vessels. The histological diagnosis was made hemangioma.

Although secondary neural involvement by cutaneous and soft-tissue primary tumors has been well described, (2-4) true hemangiomas that arise within the epinerium of peripheral nerves are rare lesions (2,5). Of the acceptable cases (2,6-9) there appears to be no characteristic age or anatomical distribution, although most cases occur in patients under the age of 40 years. Pain is a common symptom and may be accompanied by numbness and muscle wasting in the affected region. In one case symptoms of carpal tunnel syndrome were noted as a result of the location of the tumor in the median nerve. A history of trauma has not been a documented antecedent event. The site, age, sex, and surgical treatment of 16 (including our cases) previously described patients with an intraneural hemangioma are summarized in the Table 1.

Histologically, the majority of tumors have been cavernous hemangiomas with no features suggesting histological malignancy, but the capillary subtype also has been identified (16,18). Treatment of these benign tumors must be individualized. The benefits of total resection must be balanced against the morbidity of the procedure. Recently complete removal of an intraneural hemangioma was accomplished by intrafascicular dissection using dissecting microscopy (2,9). Such an approach offers complete removal with minimal morbidity (2).

Although no sex predilection has been noted, the majority of cases have occurred in the first and second decades of life. The involved sites have included the peroneal (9,10), median (8,11), digital (14,15), ulnar (7,16), trigeminal (7,18), sciatic (18), cervical sympathetic ganglion (8), posterior tibial nerves (5,19) and peroneal nerves (19).

The consensus as to the histogenesis of peripheral nerve hemangioma favors origin in the capillary bed of the epinerium with subsequent extension into the nerve trunk (15). The endothelial differentiation character of the lining cells, including factor VIII related antigen staining and blood-filled channels devoid of inflammation, is characteristic of the benign neoplastic hemangioma (5).

Perhaps the most significant aspects of the intraneural hemangioma one the potential for recurrence, development of severe pain, and loss of function of the involved tissue site. Clinical identification is therefore of paramount importance to direct appropriate treatment (5). We conclude that the peripheral nerve hemangioma is a rare variant of hemangioma to be asymptomatic on presentation.

References


