Short report

Carpal tunnel syndrome: an unusual presentation of brachial hypertrophy

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SUMMARY A patient with carpal tunnel syndrome in association with congenital hypertrophy of right upper limb is described. The median nerve also showed hypertrophy. The symptoms were relieved by decompression of the carpal tunnel.

Carpal tunnel syndrome has a wide variety of causes.1-4 Brachial hypertrophy is a rare cause.

Case report

An 18 year old right-handed girl complained of numbness of the right thumb and index finger for six months. This used to occur after exerting the hand as in writing or lifting weights. She had noticed a gradual increase in the size of the right upper limb since childhood. No pain in the arm was noted at any time. Examination revealed a normoasthenic young female. Her blood pressure was 120/80 mmHg. No angiomatosis or neurofibromata were detected. There was hypertrophy of the right upper extremity with no dilated veins. The upper arm and forearm girth was greater on the right than on the left, by 35 mm or 40 mm respectively. Wasting of the thenar eminence and inbending of index finger were noted (fig 1). Cutaneous sensory impairment of median nerve distribution in the hand and a positive Tinel's sign were also noted. No bruit could be heard over the neck or arm.

Routine investigation of haemogram, urinalysis, and biochemistry were normal as was a radiograph of the chest. Radiography of the right arm showed hypertrophy of the soft tissue but no bone abnormality could be seen. Brachial angiography did not show any abnormality in the vascular pattern. Nerve conduction studies showed slight reduction of motor nerve conduction velocity in the forearm (table 1). Denervation potentials were recorded from the right abductor pollicis brevis on electromyography.

Table Right median nerve conduction studies

<table>
<thead>
<tr>
<th>Median nerve</th>
<th>Before surgery</th>
<th>One month after Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distal latency</td>
<td>10.5 ms</td>
<td>5.8 ms</td>
</tr>
<tr>
<td>(Normal 2.63 ± 0.52)</td>
<td>45 m/s</td>
<td></td>
</tr>
<tr>
<td>Conduction velocity</td>
<td>39.5 m/s</td>
<td>25 μV</td>
</tr>
<tr>
<td>(Normal 59.9 ± 5.5)</td>
<td>2.4 m/s</td>
<td></td>
</tr>
<tr>
<td>Sensory action potential</td>
<td>Not recordable</td>
<td></td>
</tr>
<tr>
<td>(Normal 39.58 ± 9.67 μV)</td>
<td>2.01 ± 0.25 ms)</td>
<td></td>
</tr>
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</table>

Fig 1 Right hand shows hypertrophied thumb, index and middle fingers. Wasting of the thenar eminence and inbending of the index fingers are also evident.

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Surgical exploration of the carpal tunnel was undertaken. The flexor retinaculum was tight and compressing the structures in the tunnel. The median nerve was thick proximally, looked greyish, and was tightly compressed under the retinaculum. The tunnel was decompressed adequately. A single fascicular biopsy of median nerve showed perineurial collagenous proliferation, endoneurial oedema, fragmentation, and segmental demyelination of the nerve fibres (fig 2).

Fig 2 Photomicrograph showing endoneurial oedema. Haematoxylin and eosin, original magnification × 160.

One month after operation there was no numbness, and no sensory deficit in the median nerve distribution could be detected. Nerve conduction studies were repeated (table 1).

Discussion

Carpal tunnel syndrome is an entrapment neuropathy of median nerve occurring at the carpal tunnel formed by the flexor retinaculum at the wrist. The median nerve is involved in a variety of conditions such as myxoedema, acromegaly, myeloma, amyloidosis, rheumatoid arthritis, and pregnancy. Rare causes are pseudogout, anoma

Our patient had right upper extremity hype

References

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K T Shenoy, P K Saha, and M Ravindran
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