Carpal tunnel syndrome combined with trigger finger in early childhood.

Sir,—The most common lesion of the median nerve is chronic compression at the wrist. In early childhood, however, the carpal tunnel syndrome (CTS) is an extremely rare condition. Lettin\(^1\)\(^2\) reported an 11 year old girl and a 14 year old boy, both suffering from a carpal tunnel syndrome on one side, McArthur et al\(^3\) described bilateral carpal tunnel syndromes combined with a trigger finger on either side in two siblings, 7 and 15 years old. We describe a similar case of an 11 year old girl with bilateral carpal tunnel syndrome and a trigger fourth finger.

The girl had wasting of the thenar eminence and weakness of those intrinsic muscles supplied by the median nerve, the right hand being more effective than the left. A trigger finger was present in the fourth digit on both sides with the digit locking in flexion. Both conditions had been observed by the parents in the first years of life. The pregnancy, delivery, neonatal period and following development were unremarkable. There were no symptoms of systemic illness or relevant diseases in the family. Difficulties in performing school gymnastics and needle-work were the reasons why the child was sent for examination. This showed a distinct thenar muscle atrophy (M abductor pollicis brevis, M opponens pollicis) and atrophy of the first and second lumbrical muscles more marked in the right hand (figure). The flexor pollicis brevis muscles were less affected. There was a sensory deficit in the distribution area of both median nerves. Sweat secretion was reduced mainly on the palmar aspect of digits 2 and 3. The trigger finger was observed bilaterally in digit 4. No other abnormality was found. Radiographs of the wrists, hands and chest were normal: the laboratory data showed no evidence of a metabolic disorder. Distal motor latencies were determined on the right side by stimulating the ulnar and median nerve at the wrist, recording the action potential from the hypothenar muscles (2.9 ms), the adductor pollicis brevis (3.1 ms), and thenar muscles (7.7 ms). Sensory nerve action potentials after stimulating the nerve fibres in the fifth and second finger were recorded at the wrist. No sensory response could be obtained from the right median nerve. The conduction velocity of the ulnar nerve was within the normal range (54.1 m/s). The conduction velocity of the mixed median nerve segment between wrist and elbow was 50 m/s. Intraneural neurolysis was performed using microsurgical technique (Samii\(^4\)). The median nerve was found compressed on the right side in a quarter of its original size at the level of the transverse carpal ligament. A nerve compression, stage III (Samii\(^4\)) was diagnosed. The ligament was abnormally thick. Histology of the tendon sheath showed a mucoid thickening of collagenous fibrous tissue with widespread oedema. There were no signs of inflammation.

As far as we know this is the second description of CTS and trigger finger in childhood mentioned in literature. The symptoms in our case were probably present in early childhood. The median nerve compression may even have been congenital. The late referral to hospital may be because children do not normally notice or seldom complain of early symptoms of median nerve compression. The first symptoms are, as in our case clumsiness or inability to write or to do needle-work and school gymnastics. Certainly some cases remain unrecognized. Early diagnosis and treatment by intraneural neurolysis can prevent atrophy and sensory deficit and such defects frequently are reversible.

References


K MAURER
A FENSTE
Department of Neurology
University of Mainz
Langenbeckstrasse
D-6500 Mainz
M SAMII
Department of Neurosurgery
Nordstadt Krankenhaus, Hannover
D-3000 Hannover

Figure  Palmar aspect of both hands showing thenar atrophy pronounced on the right side.