WRIST GANGLION

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Ijaz Ahmad (Department of Surgery, King Edward Medical College, Lahore.)

Ganglia account for about two third of all hand tumours[1]. They occur on the dorsum of the wrist, the volar aspect of the wrist and in the fingers in relation to the flexor tendon sheaths and small joints of the digits[2]. Their prevalence makes ganglia well recognised by even the inexperienced hand surgeon, meriting the title of "spot diagnosis" [3]. In spite of their frequency, their aetiology and pathogenesis is not clear[4]. They are notorious for recurrence[5] causing mental anguish to the patient and frustration to the surgeon. A prospective study was undertaken to search for the aetiological factors, pathogenesis and factors responsible for recurrence and ways to overcome them.

PATIENTS, METHODS AND RESULTS

From 1st July 1989 to 30th June 1991, 84 patients (14 males, 70 females) with wrist ganglion were seen. Ages of the patients ranged from 14-56 years, with a mean of 22 years. All males and 55 females (83%) belonged to urban area. Seven males and 28 females (40%) were married. Twelve cases had recurrent ganglia. Most (52) ganglia involved the right hand, while bilateral ganglia were found in none. Major presenting features were unsightly deformity (41), pain at the site (19) or radiating elsewhere (7), weakness of finger movements (7), difficulty in wrist movements (6) and recurrence in 4 cases. Seventy one dorsal ganglia were operated upon as outpatient cases after infiltration of 1% lignocaine around the ganglion without entering its substance. Thirteen ganglia on the palmar aspect including three compound palmar ganglia were operated under general anaesthesia after application of tourniquet. The opera-five findings are given in Figure 1 and 2 and the attachment of ganglia shown in Table.

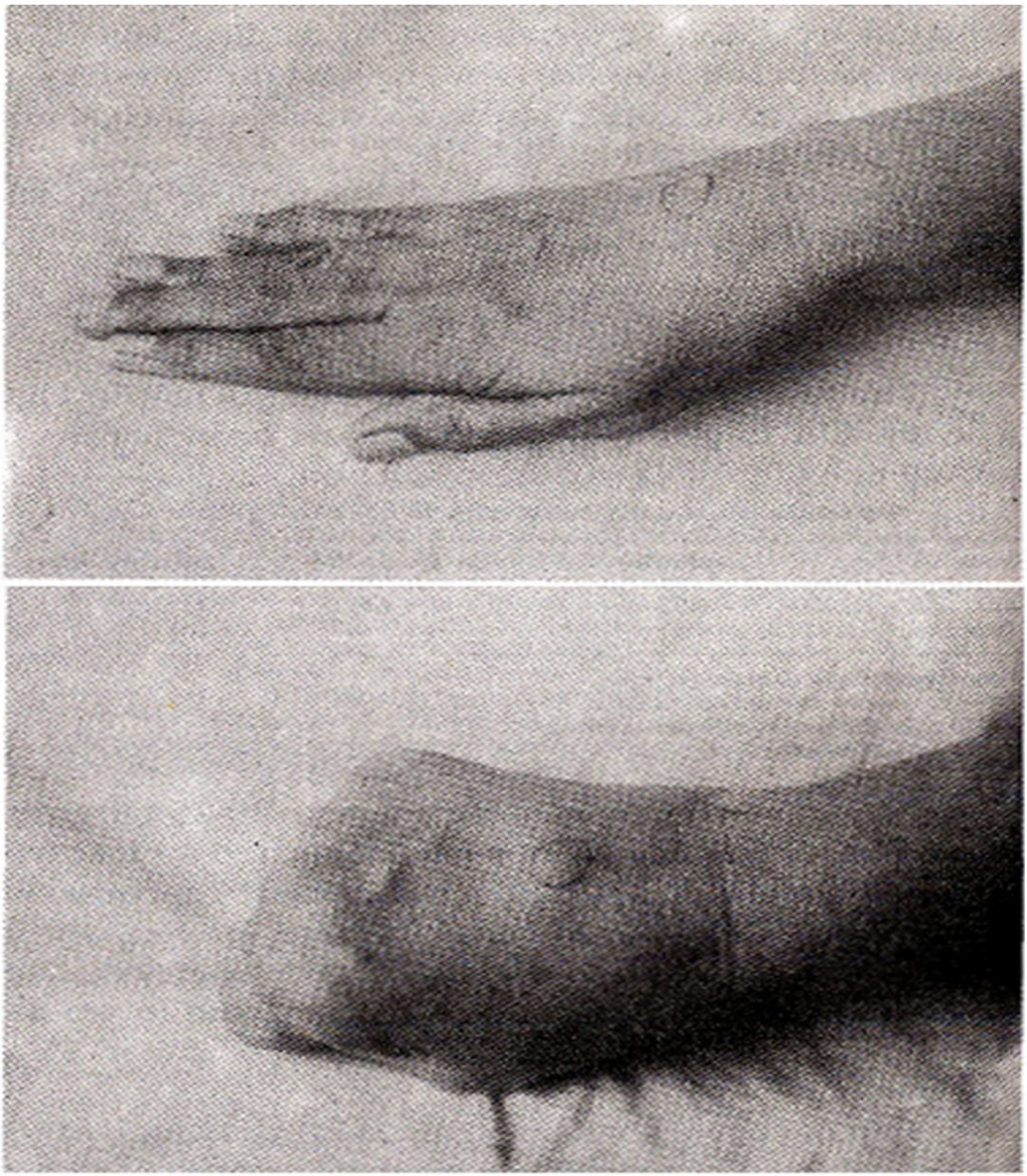

Figure 1 & 2. A dorsal wrist ganglion in connection with the tendon sheath. The ganglion moves distally when the tendon is stretched during flexion of fingers and proximally when the fingers are extended.

TABLE. Attachments of the ganglia.

Source of origin	Patients	Percentage
Joint cavity		
i. Scapholunate	45	53.5
ii. Radioscaphoid	3	3.6
iii. Lunotriqutrial	2	2.4
Total	50	59.5
Tendon sheaths		
i. Flexor pollicis longus	8	9.5
ii. Extensor dig. (index)	5	5.9
iii. Flexor carpi-ulnaris	2	2.4
iv. Extensor dig. (Middle)	2	2.4
v. Extensor pollicis longus	1	1.2
Total	18	21.4
Free lying	13	15.5
Compound palmar ganglion	3	3.6
Total	84	100

Majority (45) of the ganglia involved dorsal aspect of the wrist joint between scaphoid and lunate after piercing the scapholunate ligament and smaller number involved radioscaphoid and lunotrigutrial joints. Eighteen ganglia were attached with the tendon sheaths, while 13 were lying free after severance of their connection from the synovial sheath of the joint or tendon. The wounds were covered with sterile gauze and supported by cotton wool dressing. These were ex-examined after one week at the time of removal of stitches. Patients were advised to keep the hand elevated and take analgesics as and when required. No antibiotics were used. There were no cases of wound infection. Two patients came back with recurrence, one dorsal and other volar about 6 months after the operation. Fourteen cases of recurrent ganglia (12 operated upon previously and 2 from the present series) were investigated to determine the cause of recurrence. Of these 10 were on dorsal and 4 on volar aspect. The dissection in each case was carefully carried upto the neck where a communication with the parent synovial membrane could be established. Nine recurrent ganglia were in relation with the joint capsule and 5 in relation with the tendon sheaths. Non-obliteration of the communication was taken as the cause of

recurrence.

COMMENTS

Following features about the aetiology of this common condition were revealed during this study. In three instances wrist ganglia occurred in real sisters and in eight instances in the first cousins. In two cases the mother and daughter both had ganglia. In one family three out of four sisters and one out of two brothers had ganglia. All these findings indicate a genetic predisposition making the joint capsule weak in a particular area initiating ganglion formation. More frequent involvement of dominant hand and its preponderance in teen age girls may be due to irritation or repeated minor trauma. Although no casual relationship between occupation and ganglion formation has been demonstrated[6] oft repeated specific movements particularly washing of clothes and spoon movement during cooking may produce stretch on the joint capsule and lead to its wear and tear. More frequent observation in the urban population may be an error of presentation. The village girls and particularly village boys may not be bothered about an asymptomatic swelling and may not present for “cosmetic surgery” as opposed to the urban teenagers. Three patients of compound palmar ganglia contained melon seed bodies and were tuberculous in nature on histological examination. They represented a well established pathology[7]. Ganglia could arise from the synovial membrane of the joint or tendon sheath[8]. In this series about 60% of the ganglia were in relation with the joint capsule, 21% with the tendon sheaths, 15% were lying free and 4% were compound palmar in nature. They may retain a connection with the parent synovial membrane or be severed from it and become loose[9]. It is important to obliterate this communication if a recurrence is to be avoided[10,11]. It is very helpful if the source of origin can be determined pre- operatively by moving the ganglia in two planes which will indicate whether it is in relation with the joint capsule, tendon sheath or in free lying.

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