THE HAND PATIENT

GANGLION OF THE FLEXOR TENDON SHEATH

Dear Colleague,

Re: Your patient with a small hard tender nodule at the base of the volar aspect of the right middle finger

Thank you for your referral of Mrs. F v Z a 54 year old right hand dominant housewife who has been complaining of a painful nodule in the palm of the right hand. This little nodule interferes with her daily activities when she holds something tight such as the steering wheel of a car. She has difficulty also in holding her tennis raquet making it impossible to hit hard strokes. This nodule has come up spontaneously. She claims that there is no history of injury such as a needle or a thorn prick.

On **examination** one does not see much but on palpation one finds a four by four millimeter very hard little nodule on the radial side of the flexor tendon sheath at the base of the right middle finger. This little nodule is tender on palpation and is fixed to the deep structures. On flexing and extending the middle finger one gets the impression that the nodule may be attached to the flexor tendon sheath. The neurovascular examination of the hand is otherwise normal. She has early signs of osteo-arthritis of the distal interphalangeal joints (DIP joints). She had a previous left carpal tunnel release.

Special investigations include only x-ray views of both hands to exclude underlying pathology. The x-ray views show early osteo-arthritic changes of the DIP Joints. No other abnormalities are be seen.

The most likely **diagnosis** is a ganglion of the flexor tendon sheath. As a **differential diagnosis** one should include a Dupuytren's nodule (fig 1), lipoma (fig 2), implantation dermoid (fig 3) or a foreign body reaction due to e.g. a thorn. However these are distinctly different and should not be to difficult to exclude on a clinical examination. Sometimes one can see a sesamoid bone at the same level (MP joint) on x-rays. However these bones are very seldom palpable and are much deeper i.e. lying between the flexor tendon sheath and the meta-carpo-phalangeal joint. In younger patients one could include in the differential diagnosis a giant cell tumor of the tendon sheath (fig 4). This is a benign tumour which usually presents more distally in the finger rather than proximally and has a more defuse appearance rather than a small hard round nodule.

The **treatment** is conservative in the first instance. One could aspirate the little ganglion and confirm the diagnoses. A small drop of mucoid, jelly-like fluid will confirm the diagnosis. Should the swelling not be aspirateble one should consider one of the differential diagnosis. The tumour should then be excised and histologically examined.

If the nodule disappears after aspiration one should warn the patient that the swelling could appear again in due course. This is due to a type of one way valve which will cause the ganglion cyst to fill up again. In such an event the ganglion should be excised with its pedicle which is attached to the flexor tendon sheath as well as a small part of the flexor tendon sheath around the pedicle.

Discussion

These tender hard nodules are often found with other lesions indicating that the patient is suffering form an "osteo-arthritic hand". Conditions such as DIP osteo-arthritis, first carpo-meta-carpal osteo-arthritis, trigger fingering, carpal tunnel syndrome and ganglions of the tendon sheath form this "quintet syndrome". It is important to warn your patient that she may suffer from any of the other conditions or could develop them in the future.

I find aspiration helpful since it immediately solves the problem and in a large percentage of patients obviates the need for surgery. Although the aspiration is painful when the needle is inserted, patients are overall very grateful that the problem is not only solved immediately, but also confirms the diagnosis.

With sincere regards,
Ulrich Mennen

Legend:

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Fig. 1-4 are differential diagnoses to the small ganglion, which usually is not visible but clearly palpable.

Fig 1: Dupuytren nodule

Fig. 2: Lipoma

Fig. 3: Implantation dermoid

Fig. 4: Giant cell tumour of tendon sheath

The ganglion is a very hard, small, round "tumour" and is characteristically tender only when direct pressure is applied. Patients often refer to these spontaneous swellings as a "new bone" that has developed. Aspiration helps to exclude other causes of tumours, but the patient should be warned that they may recur, and then need surgical removal.

However, if any doubt exists regarding the clinical diagnosis, surgical resection should be done initially for histological examination rather than an aspiration.