


AUTHOR QUERY FORM

 ELSEVIER	Journal: JCOT	Please e-mail your responses and any corrections to:
	Article Number: 183	E-mail: corrections.esch@elsevier.thomsondigital.com

Dear Author,

Please check your proof carefully and mark all corrections at the appropriate place in the proof (e.g., by using on-screen annotation in the PDF file) or compile them in a separate list. Note: if you opt to annotate the file with software other than Adobe Reader then please also highlight the appropriate place in the PDF file. To ensure fast publication of your paper please return your corrections within 48 hours.

For correction or revision of any artwork, please consult <http://www.elsevier.com/artworkinstructions>.

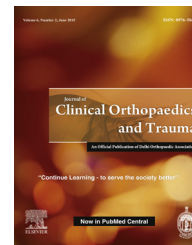
Any queries or remarks that have arisen during the processing of your manuscript are listed below and highlighted by flags in the proof. Click on the 'Q' link to go to the location in the proof.

Location in article	Query / Remark: click on the Q link to go Please insert your reply or correction at the corresponding line in the proof
Q1	<p>Please confirm that given names and surnames have been identified correctly.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>Please check this box or indicate your approval if you have no corrections to make to the PDF file <input type="checkbox"/></p> </div>

Thank you for your assistance.

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/jcot

Case Report

Carpal tunnel syndrome secondary to Masson's tumour

1
2
3
4
5
6 **Andrew Gordon Titchener** MA (Cantab), MSc (Cardiff), MRCS (Eng), AHEA *,
7 **Joan Arora** Prat LMS
8 Pulvertaft Hand Unit, Royal Derby Hospital, Uttoxeter Road, Derby DE22 3NE, United Kingdom

ARTICLE INFO

Article history:

Received 31 October 2014

Accepted 4 May 2015

Available online xxx

Keywords:

Carpal tunnel syndrome

Masson's tumour

Wrist

Neuropathy

Intravascular papillary endothelial hyperplasia

ABSTRACT

We present a case of a Masson's tumour causing carpal tunnel syndrome. Space occupying lesions should be considered as a differential in refractory cases of carpal tunnel syndrome, especially those in whom the symptoms are dynamic. Once radiological investigation confirms such a diagnosis, we advocate surgical excision, as malignancy can only be excluded via histological examination.

© 2015 Published by Elsevier B.V. on behalf of Delhi Orthopedic Association.

1. Case report

11
12
13
14
15 A 43-year-old female presented to our clinic with a 2-month
16 history of paraesthesia and pain affecting her right hand
17 corresponding to the distribution of the median nerve. Her
18 symptoms were progressive, nocturnal and in addition
19 interfered with her activities of daily living. She was right
20 hand dominant and had no significant past medical history.

21 Examination revealed no objective sensory or motor
22 abnormality but a diffuse, palpable soft tissue swelling
23 immediately proximal to the flexor retinaculum, which was
24 clinically consistent with a flexor tenosynovitis. Tinel's,
25 Durkan's and Phalen's tests were positive at the carpal tunnel.
26 A clinical diagnosis of carpal tunnel syndrome was made.

27 Median nerve conduction studies were normal. In order
28 to investigate the swelling further, an ultrasound was
29 requested, which demonstrated a soft tissue mass appearing
30 to lie between the tendons of flexor digitorum superficialis
31 measuring 4 cm by 0.9 cm (Fig. 1). The mass could be
32 demonstrated to glide proximally out of the carpal tunnel
33 and was radiologically consistent with a soft tissue neo-
34 plasm, possibly a haemangioma or lipoma. To further
35 investigate, an MRI was performed with clenched fist and
36 relaxed views. In the relaxed position, the mass was
37 identified distal to the carpal tunnel between the deep and
38 superficial flexor tendons. The clenched fist position dem-
39 onstrated proximal migration to rest in the distal forearm
40 and carpal tunnel (Fig. 2). The differential diagnosis of lipoma
41 was felt less likely at this time.

* Corresponding author. Tel.: +44 01332 340131.

E-mail address: andytitch@hotmail.com (A.G. Titchener).<http://dx.doi.org/10.1016/j.jcot.2015.05.004>

0976-5662/© 2015 Published by Elsevier B.V. on behalf of Delhi Orthopedic Association.

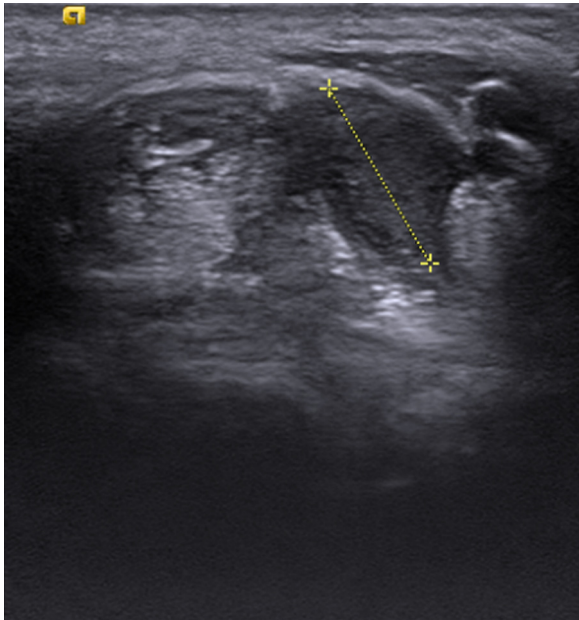


Fig. 1 – Axial ultrasound at level of distal radioulnar joint in clenched fist position.

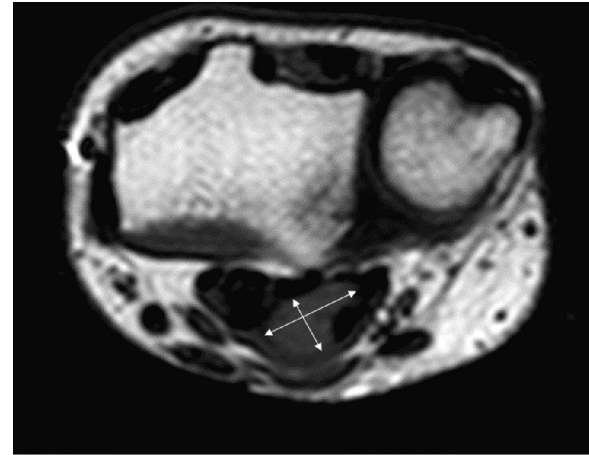


Fig. 2 – Axial T1 MRI at level of distal radioulnar joint in clenched fist position.

The patient was taken to theatre for carpal tunnel decompression and excision biopsy via an extended open approach. A well-demarcated pale grey mass was identified and found to be adherent to the tenosynovium with no gross invasive features. The procedure was uncomplicated, and the median nerve was normal to direct examination.

Postoperatively, the patient made a satisfactory recovery and was reviewed in the outpatient clinic with histological results. These showed multiple fragments of fibro-collagenous tissue containing vascular channels. There were also multiple small papillary structures, some of which were covered by attenuated endothelial cells with no significant atypia. The papillary cores were composed of hyalinised fibrinoid material. These papillae appeared to be lying free within the vascular lumen. The vascular channels were surrounded by fibrosis and inflammation. The overall appearances were in keeping with intravascular papillary endothelial hyperplasia (Masson's tumour).

2. Discussion

Masson's tumour is a benign vascular tumour described by Pierre Masson.¹ A number of descriptive terms have been used for this lesion including intravascular angiomatosis, intravascular endothelial proliferation and Masson's pseudoangiosarcoma; however, the most accurate term is intravascular papillary endothelial hyperplasia.²

Clinically, the lesion appears as a soft and often compressible mass, which is slow growing and may be painful or painless. It has been documented to occur in all major body organs and although benign, intracranial lesions have proven fatal due to their space-occupying and potentially

haemorrhagic effects. They occur frequently on the extremities, trunk, head and neck and are often clinically confused with sebaceous and dermoid cysts, granulomatous lesions, haemangiomas and other vascular pathologies both benign and malignant.³

Histologically, the lesions occur in a pure form within dilated vascular spaces or as a focal change within pyogenic granulomas or haemangiomas. They can occur at any level of the dermis or within the soft tissues, appearing as multiple or isolated papillae within a vessel lumen or dilated vascular space. They are invariably associated with thrombotic material. Both clinically and histologically, they may be mistaken for an angiosarcoma.³

To the best of our knowledge, this is the first case of a Masson's tumour causing carpal tunnel syndrome. Space occupying lesions should be considered as a differential in refractory cases of carpal tunnel syndrome, especially those in whom the symptoms are dynamic. Once radiological investigation confirms such a diagnosis, we advocate surgical excision, as malignancy can only be excluded via histological examination.

Conflicts of interest

All authors have none to declare.

REFERENCES

1. Masson P. Hémangioendothéliome végétant intravasculaire. *Bull Soc Anat (Paris)*. 1923;93:517–532.
2. Miyamoto H, Nagatani T, Mohri S, Nakajima H. Intravascular papillary endothelial hyperplasia. *Clin Exp Dermatol*. 1988;13:411–415.
3. Kuo T, Sayers CP, Rosai J. Masson's "vegetant intravascular hemangioendothelioma:" a lesion often mistaken for angiosarcoma: study of seventeen cases located in the skin and soft tissues. *Cancer*. 1976;38:1227–1236.