

Free Paper Session XI — Hand & Microvascular Surgery

11.1

Huge Tophi Affecting the Extensor Tendons over Dorsum of Hand — Surgical Outcome of Tophi Excision and Extensor Tendon Reconstruction

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Introduction: Tophi affecting the tendons in the hand are not uncommon. Debulking is a commonly performed procedure. As crystal deposits in tendons invade and infiltrate the tissue leading to destruction of individual connective tissue fibres and blood supply, potential of tendon rupture can occur especially when huge tophi are encountered. Tendon reconstruction is indicated when tendon infiltration is extensive during excision of the tophi.

Materials and Methods: A retrospective study from 2012 till 2014 was conducted and the surgical outcome was reviewed.

Results: A total of 7 patients with 6 huge tophi (>3 cm) receiving the quoted surgery were included. Seven lesions were in zone 5 to 6 and 1 in zone 7 to 8. In all, 13 tendons were involved, with 4 were managed by tendon transfer and 9 by tendon grafting using palmaris longus tendon as donor. Protected postoperative mobilisation programme was adopted. At final follow-up (mean, 20 months), range of motion of the fingers, except 3, was satisfactory. There was no recurrence of tophi or rupture of the reconstructed extensor tendon.

Discussion and Conclusion: When huge tophi affecting the extensor tendon of the hand over zone 5 or further proximal are encountered, aggressive excision of the tophi with the infiltrated extensor tendon and reconstruction by tendon grafting or tendon transfer can give satisfactory surgical outcome. This option should be included in the informed consent as it would be indicated when tendon infiltration is extensive during assessment at surgery.

11.2

Neurilemmoma in the Hand — The Clinical Picture, Surgical Outcome, and Potential Factors Affecting Outcome

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Introduction: Neurilemmoma in hand does not usually present with the classic triad (mass, differential mobility, Tinel sign). Failure to recognise a neurilemmoma may result in the inadvertent resection of a nerve. Preoperative diagnosis is important and challenging. Surgical outcome is usually good.

Materials and Methods: A retrospective study of patients with surgery done for neurilemmoma of hand from 2001 to 2013 was conducted. The clinical presentation, surgical outcome, and potential outcome-related factors were reviewed.

Results: A total of 28 lesions in 28 patients were reviewed; 17 of them were male; their mean age at surgery was 57.1 years and mean follow-up duration was 15.4 months. In all, 19 lesions were over the flexor side. Digital nerve was the most common site of involvement. All patients presented with a mass with a mean symptom duration of 41.1 months. Besides, 10 patients reported tenderness. Differential mobility and Tinel sign were noted in 11 and 6 cases, respectively. Correct preoperative diagnosis was made in 7 cases. At final follow-up, 23 patients were symptom-free. Numbness, local tenderness, and hypertrophic scar were reported in 2 patients, 2 patients, and 1 patient, respectively. No recurrence was noted and no patient needed reoperation. Young patient age, large size, and flexor side location were associated with fair outcome.

Discussion and Conclusion: Neurilemmoma should be one of the differential diagnoses when dealing with hand masses. Tinel sign should be done routinely on examination to facilitate correct preoperative diagnosis. Loupe magnification should be used during operation for optimal surgical outcome.

11.3

The Results of Contralateral C7 Spinal Nerve Transfer in Unilateral Brachial Plexus Palsy Patients — A 28 Years' Experience

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11.4

A Study on Triangular Fibrocartilage Complex Status after the Healing of Distal Radius Fracture with Plate Fixation

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11.5

Radial Head Arthroplasty: What are the Mid-term Outcomes?

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Introduction: This study aimed to evaluate the outcomes of radial head arthroplasty for Mason type III/IV fractures of the radial head.

Materials and Methods: A total of 10 patients with Mason type III/IV radial head fracture treated by radial head arthroplasty (RHA) from 2007 to 2011 were recruited and followed up till 2015. Demographic data, clinical outcomes, and radiological findings were evaluated. The Chinese (QMH, Hong Kong) version of Disability of Arm, Shoulder and Hand (DASH) score was used to measure patient's functional outcome after RHA.

Results: The mean age of patients was 45 (range, 16-62) years and their mean follow-up time was 69.4 (range, 60-85) months. Most patients experienced minimal or no pain on daily activities (mean [range] visual analogue scale score, 1.6 [0-4]). The mean elbow motion arc was 107.5 (range, 90-145) degrees, and the mean pronation-supination arc was 158 (range, 110-180) degrees. The mean grip strength (% of contralateral normal hand) was 83.1% (range, 69.0%-96.6%). The mean DASH score was 26.7 (range, 2.5-46.7). Radiological changes including implant migration, non-progressive radiolucency, periprosthetic osteolysis, capitellar erosion, and radial head subluxation were demonstrated. There was no radial head dislocation or component dissociation. None of the patients had elbow instability nor require revision operation.

Discussion and Conclusion: The mid-term clinical outcome of patients after RHA achieved satisfactory result. However, progressive radiological changes were common and implant failure may be a problem in the long term. Long-term study is required.

11.6

Review of Clinical and Radiological Outcome of Self-locking Finger Joints in Metacarpophalangeal Joints Arthroplasty. An Alternative Choice in Future

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Introduction: Metacarpophalangeal joints (MCPJ) contribute most of the total finger flexion arc (>50%). It is very disabling for those patients who suffered from inflammatory joint disease with destruction of cartilage or subluxation of MCPJ. Silicon interposition arthroplasty is the gold standard treatment for these patients. However, early breakage of implant complicated with silicon synovitis was observed in young patients. Self-locking finger joint (SFLJ) implant may be an alternative choice.

Materials and Methods: A total of 33 MCPJ arthroplasties with SFLJ performed from 2008 to 2014 were reviewed. The latest postoperative motion arc, mean extension lag and ulna drift were compared with preoperative data. We borrowed the concept of Gruen zone and a new radiological review system was proposed to review these SFLJ X-rays systematically.

Results: The mean motion arc improved from 38 degrees to 52.7 degrees. The mean ulna drift was 23 degrees and the extension lag was 12 degrees. All results were comparable with those with silicon interposition arthroplasty performed. A mean of 0.6 mm subsidence was noted. Zone 1 radiolucency was noted in 21 cases likely due to stress shielding effect. One case of broken locking pegs and 3 cases of good bone ingrowth at locking pegs were noted (zone 2 changes). Despite the radiological findings, all patients were asymptomatic and with significant improved hand function.

Conclusion and Discussion: The SFLJ implant status could be analysed systematically by the proposed X-ray review system. The SFLJ may be a good choice for those young and high-function-demand patient with MCPJ problem.

11.7

Electromyographic Result and the Thumb Function Outcome among Patients with Severe Carpal Tunnel Syndrome who Underwent Camitz Tendon Transfer**CM Durban,¹ B Antolin,² DKH Yee,³ L Li,⁴ WY Ip²**¹*Department of Orthopaedics and Traumatology, Southern Philippines Medical Center, The Philippines*²*Department of Orthopaedics and Traumatology, The University of Hong Kong, Hong Kong*³*Department of Orthopaedics and Traumatology, Queen Mary Hospital, Hong Kong*⁴*Department of Medicine, Tung Wah Hospital, Hong Kong*

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11.8

The Effect of Partial Excision of the A2 and A4 Pulleys: A Normative Model**M Mak, WL Tse, PC Ho***Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong*

In flexor tendon injuries of the hand, partial pulley excision may facilitate tendon repair and prevent catching of the repair site at the pulley edges. To better understand the effect of pulley excision, a mathematical model of the relationship of the flexor tendons, the proximal interphalangeal joint, and a 2-pulley system (A2 and A4) in the sagittal plane is devised. Ultrasound and X-rays were performed in 5 healthy volunteers for both index fingers to obtain the distance from the volar tip of the pulley edges to the joint rotation centres. The effect of 25%, 50%, 75%, and complete pulley excision on moment arm and tendon excursion was investigated and was compared with the normal anatomical situation in a cadaveric study by An et al. It was found that excision of the A2 pulley resulted in only slight increase in moment arm (reflecting bowstringing) and tendon excursion, whereas the effect of the excision of the A4 pulley was more significant. This was due to the shorter distance between the A4 pulley and the joint centre. Results of this study showed that the effect of excision of the A4 pulley may have a greater effect on tendon function than that of the A2 pulley, and that the A2 pulley can be excised partially without a significant loss of total range of motion. This is the first normative and adaptable model of the flexor system of the proximal interphalangeal joint with respect to the lengths of the phalanges.