

Transcatheter Arterial Micro-Embolization (TAME) for Relieving Chronic Shoulder Pain Refractory to Conservative Treatment

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Disclosure

Speaker name: Sang Woo Park

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest

Introduction

- Musculoskeletal disorders
 - : severe chronic pain and disability
- Angiogenesis
 - : chronic pain by enabling growth of new unmyelinated sensory nerves along their path
 - : abnormal neovessels with accompanying nerve fibers in tissues from various painful conditions in histopathologic studies
 - : to the genesis of inflammation and its maintenance

Mappl PI, Nat Rev Rheumatol 2012; 8:390

Walsh DA, Osteoarthr Cartil 2007; 15: 743-751

Xu Y, J Shoulder Elbow Surg 2012; 21:1391

Alfredson H, Knee Surg Sports Traumatol Arthrosc 2003; 11:334

Introduction

- Pharmacological inhibition of angiogenesis
 - : improvement of inflammation and pain behavior in animal models
- Pain relief and embolization of abnormal neovessels
 - : improving inflammatory conditions (abnormal vv maintain inflammation)
 - : reducing stimulation from accompanying nerve fiber
- Transcatheter arterial embolization for musculoskeletal disease (TAME)
 - : Adhesive capsulitis
 - : Tendinopathy
 - : Osteoarthritis of knee

Ashraf S, Arthritis Rheum 2011; 63:2700

Okuno Y, J Vasc Interv Radiol 2013; 24:787

Okuno Y, J Shoulder Elbow Surg 2014; 23:199

Okuno Y, Cariodvasc Intervent Radiol 2015; 38:336

Clinical History

- A 60-year-old female with Lt shoulder pain lasting for 19 M
- The patient had ulcerative colitis → difficult to take nonsteroidal anti-inflammatory drugs (NSAIDs).
- Extracorporeal shock wave therapy (ESWT, #3) and corticosteroid injection (CSI, #4) → ineffective in pain relief.

Pre-treatment Imaging



- Plain radiography and US
 - : Marked swelling with calcific deposit in supraspinatus and infraspinatus tendon suggesting calcific tendinitis
 - : The patient was reluctant to get a surgery

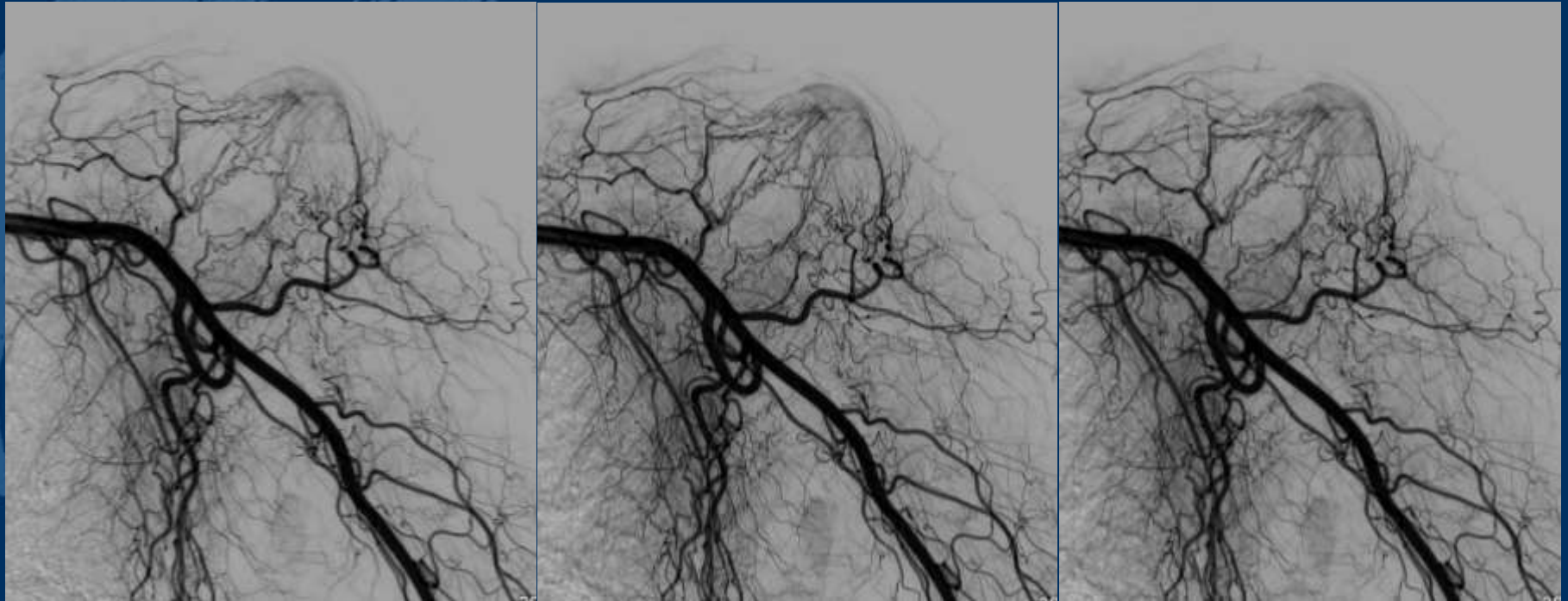
Treatment Options / Results



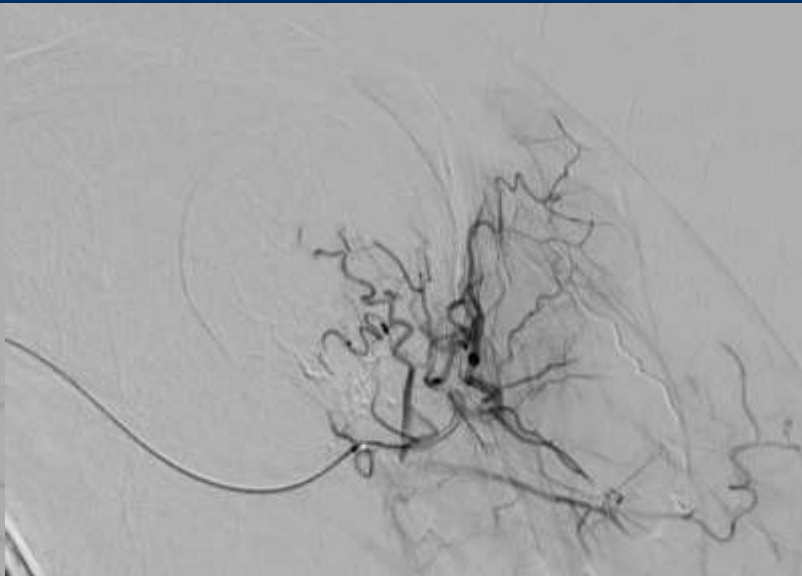
Characteristics	IPM/CS	Embozene
Particle size	10–70 μm	75 μm (calibrated)
Embolic effect	Temporary	Longer term

- Imipenem/cilastatin sodium (IPM/CS) suspension
: 500mg IPM/CS combined with 5ml~10ml iodixanol 320mg/ml (Visipaque)

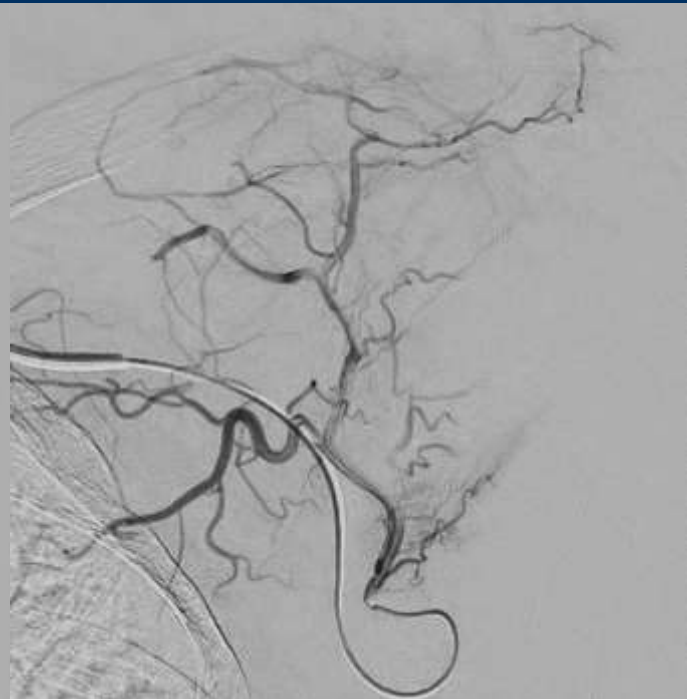
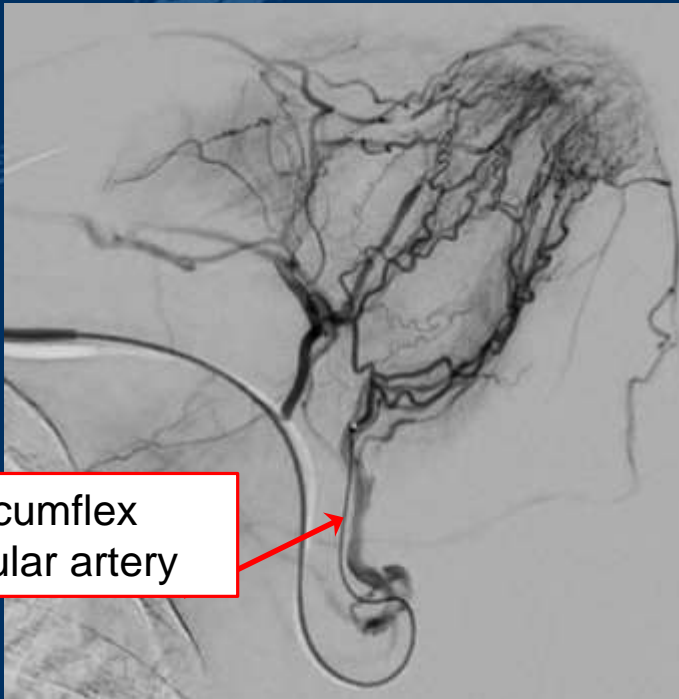
Treatment Options / Results



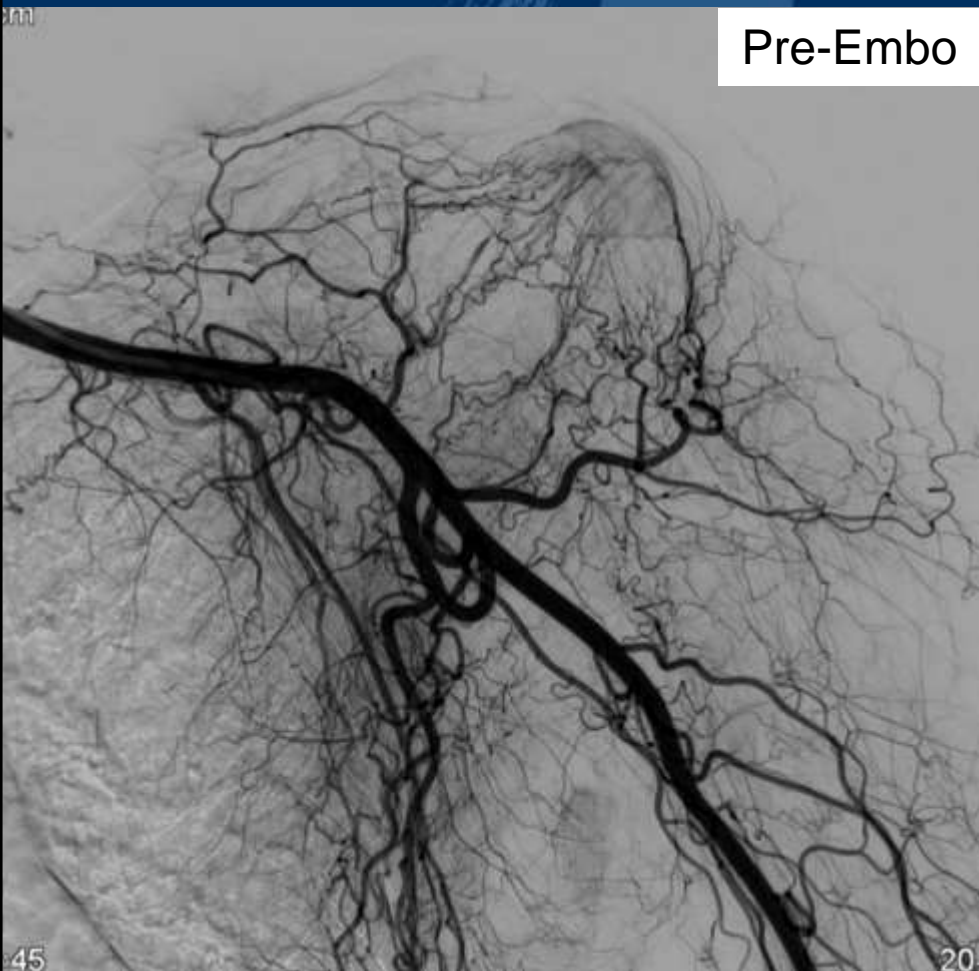
Posterior
circumflex
humeral
artery



Circumflex
scapular artery



Distinct enhancement
Total volume : 10.6 cc (IPM/CS)



Treatment Options / Results

- Visual analog scale was decreased from 8 before the procedure to 1 at 4 months follow-up.
 - VAS score : 8 (Pre), 7 (1 d), 2 (1 wk), 2 (1 m), 1 (2 m), 1 (4 m)
 - Treatment : ESWT (#3), CSI (#4) (Pre) → none (4 m)
- There was no major or minor adverse event after procedure

Take Home Points

- TAE might be a treatment option for relieving pain related to chronic tendinopathy refractory to conservative treatment before considering surgery

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