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
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
Imipenem/cilastatin sodium (IPM/CS) suspension

500mg IPM/CS combined with 5ml~10ml iodixanol 320mg/mL (Visipaque)
Treatment Options / Results
Distinct enhancement
Total volume : 10.6 cc (IPM/CS)

Posterior circumflex humeral artery

Circumflex scapular artery
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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