Venous Malformations Of The Lower Extremity: LongTerm FollowUp

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Diffuse VM of Lower Extremities

• Clinical aspects
• Treatment
• Evolution

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Enjolras et al. ; Surgical treatment of the knee VMS:

• Synovectomy, excision in seven patients
• Mobility returned to normal in three months [5/7]
• Continued limitations in mobility 2/7
• Recommend early resection to prevent cartilage damage.

Extensive pure venous malformations lower limb: A review of 27 cases in the upper or lower extremity
Odile Enjolras, MD, Dominique Cabrol, MD, Elizabeth Maxion, Claude Laurian, MD, and Denis Herbreteau, MD Rots, France, 1997

• Knee joint VM 13/16 cases (81%)
• Recurrent episodes of joint pain and swelling caused by effusion and hemarthrosis beginning in childhood (88%)
• Instability, stiffness, atrophy of the leg, flexion contractures, progressive knee ankylosis
• Intra-articular, extrasyovial; intermittent stiffness and pain secondary to thrombotic episodes
• Intrasynovial; recurrent hemarthrosis, pain, limitation and motility, progressive destruction of cartilage, bone alteration

Too late!
Intra-articular VM

Surgery first

• Most patients in my practice were improved by surgery but needed additional treatment after resection

5 yo, diffuse VM
2003

2004, post excision, pain

2005, pain

2007, controlled
Pre-op, 2002, 2 yo, limp

Arthrotomy, synovectomy, resection at 3 years of age; “articular cart excellent”. MRI 4 years po 2006

2009

2010, knee instability; arthroscopy showed severe cartilage damage

Continued knee pain

2015 eager for knee replacement
Intra-articular Venous Malformations of the Knee
Dalmonte et al., Italy. J Pediatr Orthop. 2012

- Resection at time of diagnosis, median 7.5 y
- 12/14 asymptomatic in 6 mos, full ROM
- Noted increased osteochondral disease and worse prognosis with truly intrasynovial form

Surgical Treatment of Intra-articular Knee Venous Malformations: When and How?

- 8 children, mean age 12.3 y; diffuse VM 6/8
- 5 year follow-up
  - Persistent VM in joint on MRI 6/6 diffuse VMs
  - 4/4 pre-op chondropathy and functional impairment were not improved
  - 4/4 without chondropathy were asymptomatic

What about sclerotherapy?

VM most of body 2006 (7yo), coagulopathic

- Resection declined “extrasynovial”

4 sclerotherapy sessions
poor follow-up, compliance

2014; fixed contracture
2009. 10 yo, diffuse VM, knee pain

2011

Foot drop, achilles contracture, fracture

2013; pain, unable to walk

Diffuse VM of lower extremity

- Patients still have poor longterm prognosis
- Early resection of articular component still appropriate
- Indication for sirolimus?