

A 12 month retrospective audit of yttrium synovectomies done at the Ronald Sawers Haemophilia Centre

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Background

- Haemophilic arthropathy
 - Acute haemarthrosis
 - Subacute arthropathy
 - > Repeated joint bleeds / synovial thickening
 - > Target joint
 - Chronic arthropathy
 - > Loss cartilage; sclerosis subchondral bone
- Secondary synovitis
 - Product prophylaxis
 - Intra-articular injections
 - Yttrium synovectomy
 - Surgical synovectomy



Background

Yttrium

chemical element Y39

makes phosphors used in LEDs and television cathode ray tubes

Y90

radioactive isotope

half life 2.5 days

Beta radiation (2mm)



Yttrium synovectomy technique

- Similar technique to intra-articular cortisone injection
- Splinting / bracing
- Requires 1-2 night stay in hospital (at our institution)



Yttrium synovectomy in Haemophilic arthropathy

- 40 joints in 20 patients treated 1987-1991
- 19 severe and 1 moderate factor deficiency / 15 HIV positive
- Indications
 - Severe synovitis
 - Historically poor response to standard treatment
 - Repeated haemarthrosis
 - Joint pain
- No sided effects were encountered at the time or immediately after injection. Minor leakage to regional lymph nodes in 2 patients (2 joints)
- Significant reduction in joint bleeds ($p < 0.001$)
- Significant reduction in factor usage ($p < 0.001$)

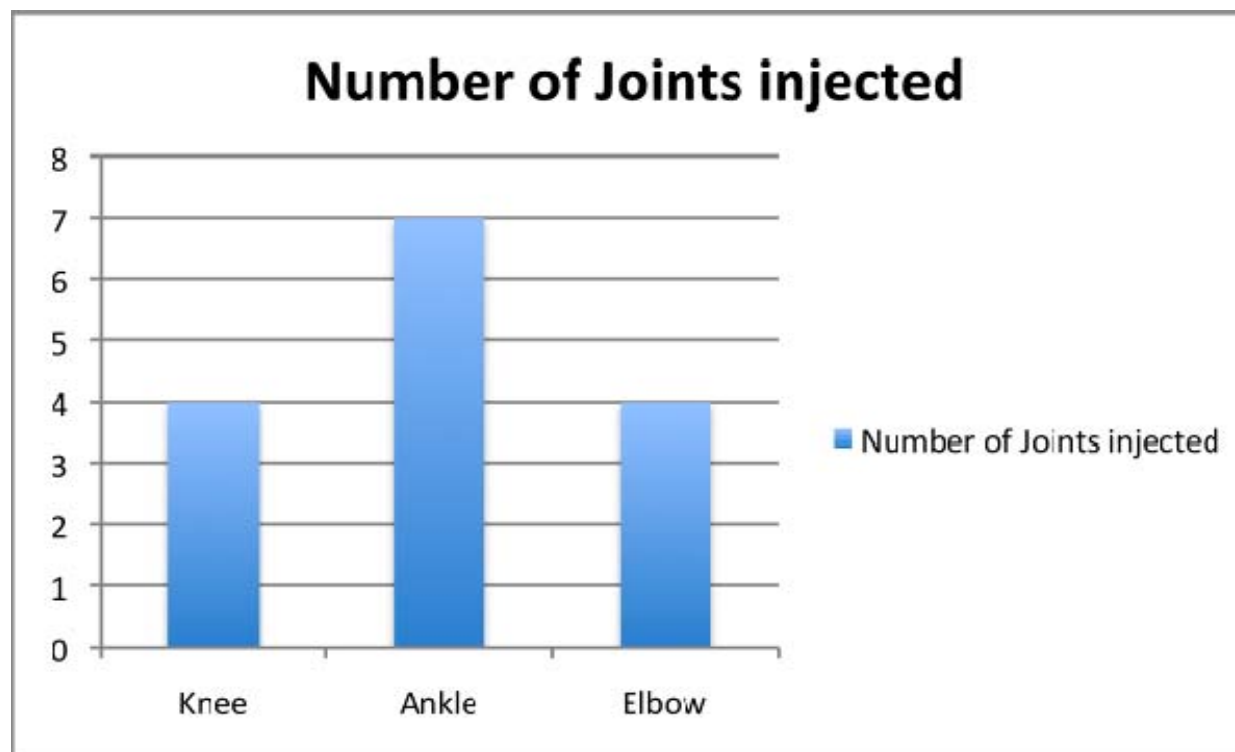
Retrospective Audit 2008



- 9 patients with haemophilia and one patient with severe Type III VWD received a yttrium synovectomy at the Ronald Sawers haemophilia Centre in Melbourne.
- Between 1-3 joints injected
- 4 patients with active Hepatitis C
- 1 patient also co-infected with HIV
- 2 patients with inhibitors (4 joints)

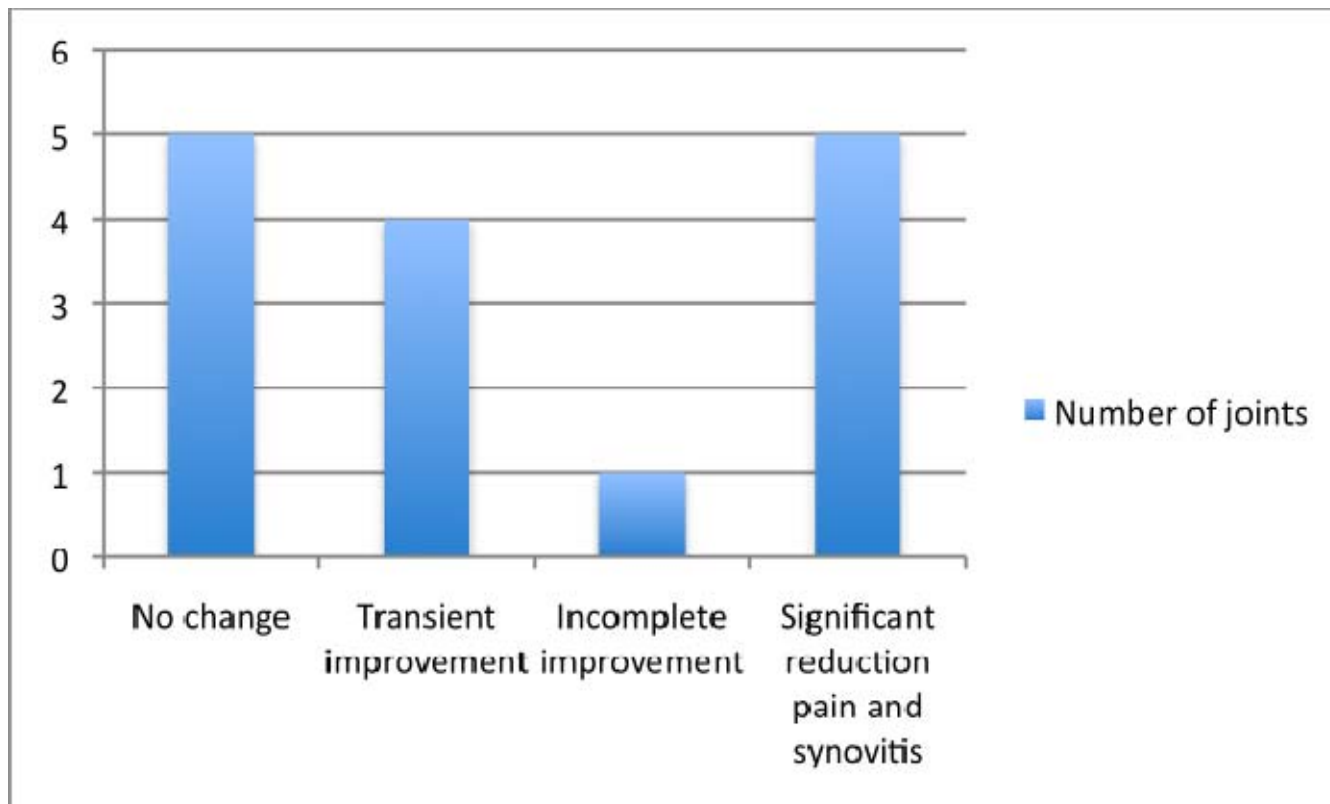
Distribution of joints injected

- Each patient had between one and three joints injected.



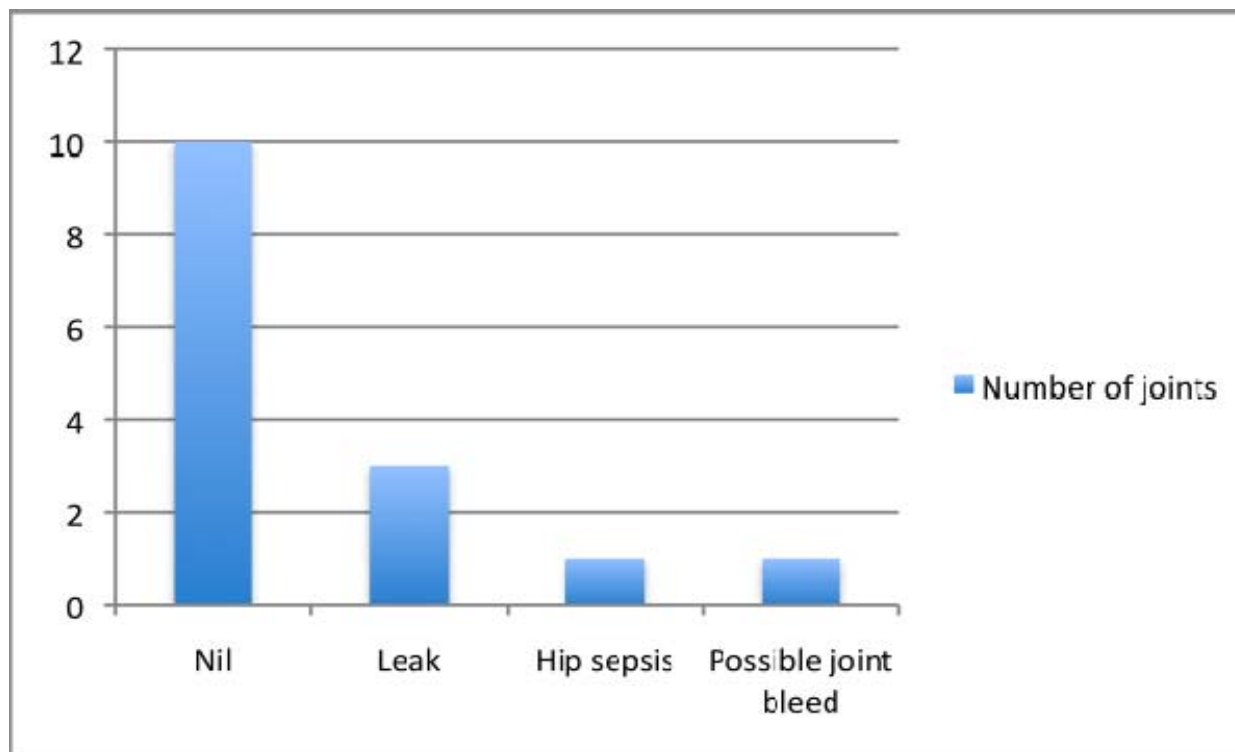
Reported outcomes

- A significant improvement was reported in only 3 patients and one reported an incomplete improvement.



Adverse Outcomes

- There were 2 cases of leakage, fortunately with no chronic sequelae.
- There was one case of septic arthritis in a different joint to that injected.
- There was one possible bleed 2 days following the procedure.





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Why are our result different from 1984?

- Product prophylaxis
- Earlier intervention
 - Dedicated rheumatology clinic in the haemophilia centre
 - Waiting list 1-4 weeks
 - Steroid joint injections (able to implement during the initial consultation if required)
- Less patients HIV positive
- MRI with gadolinium used to detect subtle secondary synovitis

Intra-articular Corticosteroid

- “Corticosteroid injection alone seem to be effective for much shorter periods of time and are not generally considered an alternative to most radionuclide synovectomies”
- BUT, practise has changed, particularly in regards to prophylaxis and product use.
- Studies done over one decade ago.

Shupak. Intraarticular methylprednisolone. Therapy in hemophilic arthropathy. Am J Hematol 1988;27:26-9

Hollander. Intrasynovial cortisosteroid therapy: A decade of use. Bull Rheum Dis 1961;11:239-40

Gray. Local corticosteroid injection treatment in rheumatic disorders. Semin Arthritis Rheum 1981;10:231-54

Conclusions

- Prior studies support the use of yttrium synovectomy in target joints
- There has been a change in treatment at our hospital over the last decade
- This may have led to decreased efficacy shown
- A larger prospective trial is being planned to clarify the efficacy of yttrium synovectomy in today's patient cohort. Hopefully we will be able to identify parameters for better patient selection.