Disclosure

Neither I, nor my spouse or domestic partner, have at present and/or have had within the past 12 months a relevant financial relationship with a commercial interest.

Comparative Use Of Bleomycin And Ethanol In Low-Flow Vascular Malformations Treatment In Multiple Anatomies

Xindong Fan
Dept. Intervention Therapy, Shanghai 9th People's Hospital, Medical School, Shanghai Jiaotong University

Introduction

- The most concentration of vascular malformation patients in China, included 3 CVA
- 1326 patients with vascular malformation discharged in my CVA last year and independent ward with 40 beds
- The ratio of low-flow vs high-flow vascular malformation 4:1
- Low-flow vascular malformation indicated for sclerotherapy included VM LM

Introduction

- VM is most common vascular anomaly
- Composed of abnormally dilated venous components without cell proliferation characteristics.
- Compared with other vascular malformations, the type, location, scope and tissue invasion of VM are significantly diverse.
- There are various treatments for VM, including surgical excision, laser therapy and interventional sclerotherapy.
- Interventional sclerotherapy has become the main method of treatment

Introduction

- LM is most common vascular anomaly
- Composed of abnormally dilated lymphatic vessels and cystic spaces of varying size.
- Vascular spaces filled with eosinophilic, protein-rich fluid.
- Three morphologic types of LMs: microcystic, macrocystic, and combined
- Macrocystic LMs single or multiloculated cysts that vary in size and are filled with lymphatic fluid as soft, compressible or noncompressible translucent masses.
- Microcystic LMs abnormal lymphatic tissue with a variable fibrous/fatty component, tiny cysts, or ectatic channels

Localized VM of the tongue
Introduction

- Common sclerosing agents include foam sclerosing agents, polidocanol, sodium tetradecyl sulfate, absolute ethanol and bleomycin.
- Absolute ethanol is the most widely used sclerosing agent in my center.
- Bleomycin A5 used in the specific location VM and microcystic LMs.
Characteristic of Ethanol Agent

- Satisfactory efficacy
- Low rate of recurrence
- Antiseptic properties
- Obvious post-operative swelling
- Higher incidence of necrosis
- Potential cardiopulmonary collapse

Characteristic of Bleomycin

- Mild, no obvious swelling
- Lower incidence of necrosis, extravasation of sclerosant
- Relative safety
- Both arterial and venous injection
- Lower incidence of pulmonary embolization
- Higher incidence of allergy, potential pulmonary fibrosis
- Atrophy of injected muscle
- Superficial ulceration, fever

Atrophy of injected lip

Indication of Bleomycin

- VM in the eyelids, conjunctiva, orbit, nasal tip, tongue sometimes
- Localized and superficial
- Microcystic LMs

Indication for Bleomycin

- VM in the eyelids, conjunctiva, orbit, nasal tip, tongue sometimes
- Localized and superficial
- Microcystic LMs
Injection of Bleomycin

Indication for Bleomycin

Shanghai 9th Hospital

Injection of Bleomycin A5
**Preparation of Bleomycin A5**

- Bleomycin A5 (8 mg) powder dissolved in 5 mL saline (lidocaine 2 ml dexamethasone 5 mg, 1 mL)
- Injected directly and infiltrated into the abnormal tissue
- The injection with high pressure until the surface turns pale and rupture in LM

---

**Ethanol Sclerotherapy**

---

**Location to Inject Ethanol**

---

**Ethanol Sclerotherapy with help of detachable coils in VM with DOV**
**Ethanol Sclerotherapy**

1 session 8ml

**End point**
Improvement of symptoms and no complete obliteration of lesion

3 x 10ml + 6ml + 5ml

**Conclusion**

- Retrospective study of 1423 VM patients with ethanol sclerotherapy during 5 years
- Ethanol used for most effective sclerosant agent in VM treatment and as first-tier choice
- Obvious swelling need temporary tracheotomy in extensive VMs involving the tongue, floor of the mouth, or oropharynx
- Transient complications around 6% of procedure (minor blisters, transient nerve injuries)
- Major complications around 0.5% (skin necrosis 4 permanent nerve injury 3 sublingual nerve 2 and peroneal 1)

**Extension of Ethanol**

- Bleomycin as second-tier sclerosant agent to prevent swelling and ulceration
- Bleomycin as first-tier sclerosant agent in microcystic LM
- Higher incidence of allergy need intravenous open
- Potential pulmonary fibrosis limited the total amount
- Atrophy of injected muscle need care in lip and repeated injection
Thank you for your attention