Embolization of rectal arteries in the treatment of hemorrhoidal disease

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Disclosure

Speaker name:
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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)

☒ do not have any potential conflict of interest
Hemorrhoids

• Most common anorectal condition.

• Prevalence 4-35%.

• Main symptom recurrent anorectal bleeding during defecation → anemia

• Surgical treatment 10% cases.
Selective embolization of hemorroidal arteries, branches of SRA, using microcoils

Galkin 1994; Vidal, 2006
• Anal Cushion: non-vascular and vascular part.
• Based on a demonstrated pathophysiological concept of arterial network hypertrophy in chronic hemorrhoidal disease.
Emborrhoid

- Painless procedure. No complications.
- Improvement in the symptoms: 60-80%
- 30% recurrence at two years.
- Could be related to an incomplete embolization technique
- Distal particles embolization + coils.
Rationale for using particle embolization and coils

- Direct effect on the plexus
- Could avoid the possibility of nutrition by MRA
  - Unstable artery. Ranges from 12 to 97% in literature.
  - Anastomosis between SRA and MRA can be above the symphysis.
    - IRA supplies blood to the Anal canal and anus.
    - Coil embolization has been demonstrated to be useful.
Particle embolization in Porcine Model

Porcine model: Particles 500

40 patients. Symptomatic hemorrhoids grade I, II, III.
5Fr catheter above point of división of SRA.
Irregular PVA 300 µm.
3-5 mm coils in SRA trunk.

No immediate complications.
No ischemia.
83% satisfaction grade III haemorrhoids and 94% grade I, II at 1 month fu.
Technique

Simmons 1, 4 Fr

2 mm pushable coils

2,4 Fr Microcather

500-700 μm hidrogel microspheres

Endpoint: distal occlusion.”pruned tree”
Our Preferred Technique
US guided radial Access

- Allows early discharge of patients
- Left Radial access needed
- 4 Fr 125 cm Multipurpose Catheter.
  - Recently 150cm catheters available
- Microcatheter Bern 2,4 Fr. 155 cm.
- 190 cm 0,014” Guidewire.

- 175 cm microcatheters soon?
Technical Aspects: Cone Beam CT?

Cone beam CT technique
Phillips Xpert Allura.
Our experience

• We have treated 25 patients with disabling chronic rectal bleeding. Evaluated by a proctologist

• 17 men, 8 women. 58.4 yo (36-81).

• Internal haemorrhoids stage II, III.

• Main symptom: Bleeding in all patients.

• After 1 month the surgeon evaluated the patients clinically and with anoscopy. And then clinically at 6 and 12 months.
Indications (25 patients)

- Crohn disease: 3
- Ulcer colitis: 2
- Liver cirrhosis: 4
- Auricular flutter, anticoagulated: 1
- Hemorrhoids below pectin line: 2
- Emergency bleeding: 1
- Recurrence after ligation/surgery: 6
- Refuse operation: 6
Results

- 22/25 cases embolization was technically successfully.
  - One patient presented IMA vasospasm and the procedure was suspended.
  - Two patients had occlusion of the IMA.

- Average Dose-Area Product (DAP) 53 Gy/cm² (7 – 144 Gy/cm²)
Results

- Clinical success 17/22, (77.3%). Follow-up: 2-29 months.
  - 3 patients presented pain (grade III VAS) that disappeared after 24h in 2 and lasted for 5 days in one patient. The rest did not experience any discomfort after the procedure.
  - 5 patients presented recurrent rectal bleeding.
    - 4 pt surgical revision.
    - 1 patient rebled 8 months after embolization → 2nd embolization
51 yo w Grade III. Bleeding hemorrhoids

Rebled 8m after embolization
MRA embolization
Results

• Anoscopy performed at 1 month, showed significant improvement in hemorrhoids.

• No ischemic complications detected.
Take home points

• Embolization with spherical particles and coils seems to be safe with few complications.

• Radial access allows early discharge of patients.

• Full significance of MRA its still unknown.

• It's mandatory to reduce the pelvic doses.

• Long term follow up and more studies are needed to establish the best emborrhoid technique.
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