HIGH-Flow PRIAPISM

Ludovic Hanquier, Gregory Amouyal, Costantino Del-Giudice, Nicolas Thiounn, Marc Sapoval, Olivier Pellerin
Ludovic Hanquier, M.D.

• No relevant financial relationship reported
Introduction

• Priapism is:
  – Persistent erection caused by unregulated cavernous arterial inflow;
  – With tumescent corpus cavernosum (not rigid);
  – Not painful.

• Roots:
  – From Greek antic period Priapus was Worshipped for fertility.
Vascular anatomy

- 3 arteries:
  - The dorsal artery is responsible for engorgement of the glans during erection;
  - The bulbourethral artery supplies the bulb and corpus spongiosum;
  - The cavernous artery responsible of corpus cavernosum.
Material and method

- Between May 2014 and December 2015,
  - 6 consecutives patients were referred for traumatic HFP.
  - All patients were managed by embolization of the cavernous artery with gelfoam.
  - The goal of our study was to report the efficacy and the safety of the procedure and the 3 months follow-up.
Material and method

• Technic:
  – 5Fr femoral seldinger
  – Super selective catheterization (2,7fr) of internal iliac arteries branches: pudendal artery then cavernosum artery.

• Embolic material:
  – Gel-Foam, prepared as torpedo.
Follow-up

- Performed in:
  - Lithotomy position
  - Frogleg position

Scanning the perineum along the entire shaft of the penis

Differentiate ischemic from nonischemic priapism:

- Ischemic:
  - No blood in the cavernosal artery (Ca)

- Nonischémic priapism:
  - Normal to high flow velocities in Ca
  - Screening test for anatomical abnormalities (fistula, pseudoaneurysm)

- Sequences T2 in three plans of space
- T1 in the best position
- After gadolinium
  - Static
  - Dinamic T1 fat sat
  - Diffusion or T1 gado lately

- Flacidity/ Erectile sequencies
• Flacidity
• Rigidity
Results

• All the patient (24 years +/- 14 [19-54]) were successfully managed.
• 5 unilateral arterio-carvenous fistula embolized with gelfoam torpedo,
• 1 patient with bilateral arterio-cavernous fistula embolized.
Results

• The priapism disappearance occurs in 12 or 24 hours in 4 or 2 patients respectively.

• At 3 months all the patient reported a normal erectile function without any recurrence.
Discussion

• In fistula treated lately with temporary embolization priapism (4)(5)(6) in aproximatly 48 hours priapism disappears when the embolization was succesfull

• Gel-foam as torpedo produces temporary interruption of the cavernosum artery using its absorbable property with 5-6 weeks effets
• Temporary embolization was preferred by permanent embolization because all study rapport a increased of the percentile of erectile dysfunction when coils or chemicals was used.

• In the study of Kyung Rae Kim et all, there was no statistically significant difference between autologous blood clot and gelatin sponge in terms of the recurrence of priapism and the preservation of erectile function. (8)
• In the study of Rados M et al. / Embolization of post-traumatic priapism, cyanoacrylate was better in second line when appears some recurrence of the fistula(2) and gelfoam was preferred for the lower risk of erectile dysfunction but increased recurrence of fistula

• Surgical resection of arteriocavernous fistula and ligation of the internal pudendal or cavernous arteries have less success in resolving priapism and restoring normal erectile function (8)
• In the Recomendation 12 and 13 of the American Urological Association Education and Research it’s important to be superselective, nonischemic, utilize in first line temporary embolizing technologies.

• The Recomendation 14 of the American Urological Association Education and Research if embolizing performed was not a succes, surgical managament it’s the last resort and be performed with color Duplex ultrasonography intraoperative.
Algorithm for the management of non-ischemic priapism (9)

PRIAPISM ★

History & Physical

Doppler ultrasound or Cavernous aspiration with blood gas

Ischemic

Nonischemic

Observation

Arteriography & Embolization

Surgical Ligation

★ Erection greater than 4 hours duration

Proceed upon treatment failure
Conclusion

• Arterial embolization with gelfoam torpedo is technically feasible and efficient to treat traumatic high-flow priapism, and to reduces the erectile dysfunction.
• (1) American Urological Association Education and Research guidelines
• (7) Marko Rados, Vice Sunjara, Ivica Sjekavica, Ranka Stern Padovan, case report Post-traumatic high-flow priapism treated by endovascular embolization using N-butyl-cyanoacrylate
• (9) http://www.smr.jsexmed.org/article/S2050-0521%2815%2930108-6/fulltext

• Récurrence
THANKS YOU