Urology Case Reports 31 (2020) 101161

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: http://www.elsevier.com/locate/eucr

Functional medicine

Penile implant surgery for conservative therapy resistant erectile dysfunction in a 19y-old

Filip Weckx [a,c,**], Koenraad Van Renterghem [a,b,c]

[a] Jessa Ziekenhuis, Urology Department, Hasselt, Belgium
[b] Universiteit Hasselt, Hasselt, Belgium
[c] KU Leuven, Leuven, Belgium

ARTICLE INFO

Keywords:
Penile implant surgery
Sexual medicine
Urology

ABSTRACT

A 19y-old male with a history of β-thalassemia presented with lifelong Erectile Dysfunction (ED), refractory to different PDE-5i's and both intra-urethral and intra cavernosal prostaglandins.

Pelvic arteriography showed a severe hypogenesis of the left cavernous artery. Psychological and other organic causes were excluded.

After informing the patient and his family thoroughly during several visits, he agreed on performing penile implant surgery. An AMS Cx 21cm +2cm rear tip extenders was implanted via penoscrotal incision. The procedure was uncomplicated and with 1 year of post-operative follow-up, the patient is very satisfied.

Introduction

Although organic erectile dysfunction is a rare condition in young male patients, penile implant surgery may be a good solution in selected and well informed patients.

Case presentation

A 19y-old male with a history of β-thalassemia presented with lifelong Erectile Dysfunction (ED), refractory to different PDE-5i's and both intra-urethral and intra cavernosal Prostaglandins.

No underlying psychological cause was withheld; sexologist counseling was unsuccessful. Normal levels of testosterone (14.48nmol/L), SHBG (17.69 nmol/L) and free testosterone (0.402 nmol/L) were confirmed. Severe anemia was absent. A pharmaco penile duplex ultrasonography with Prostaglandine E1 showed only moderate flow and insufficient tumescence. Although MRI of the genital region was normal. Selective arteriography of the pelvis revealed normal anatomy on the right side (Fig. 1), but a severe hypogenesis of the left cavernous artery (Fig. 2). MRI of the scrotal region did not show any abnormalities.

One year after initial presentation, we decided to perform penile implant surgery. Since his first visit, the patient and his family had been advised and informed by a sexologist, a specialized nurse and 2 consulting urologists. An extensive counseling was performed and all aspects of the surgery were explained in detail, including irreversibility and the likelihood of subsequent interventions for mechanical failure after time.

An AMS Cx (21 cm + 2cm rear tip extenders) prosthesis was implanted via a single peno-scrotal incision. This implant was chosen because of its more natural aspect when deflated. In this case, we found this especially important because of the young age of the patient. Antibiotic profylaxis with ciprofloxacin 500mg and amoxicillin/clavulate 2gr was administered before the procedure.

The reservoir was placed paravesical on the right side, through the single peno-scrotal incision. It was filled with 90 cc of saline after performing a back-pressure test. The pump was placed mid-scrotally.

Probably because of the congenital hypogenesis of the cavernous artery, a slight curvature of the penis was observed after inflation of the prosthesis. The curvature was assessed to be clinically non-significant and therefore there was no need for manual modeling. Surgery was uncomplicated and took 30 minutes.

The prosthesis was left 85% inflated after surgery. On day one the prosthesis was deflated to 50% of its maximum, and the patient was discharged. Prophylactic antibiotics (ciprofloxacin 2x500mg/day and amoxicillin/clavulate 3x875/125mg) were continued for 1 week.

* Corresponding author. Jessa Ziekenhuis, Urology Department, Hasselt, Belgium.
E-mail address: filip.weckx@uzleuven.be (F. Weckx).

https://doi.org/10.1016/j.eucr.2020.101161
Received 31 December 2019; Received in revised form 23 March 2020; Accepted 24 March 2020
Available online 4 April 2020

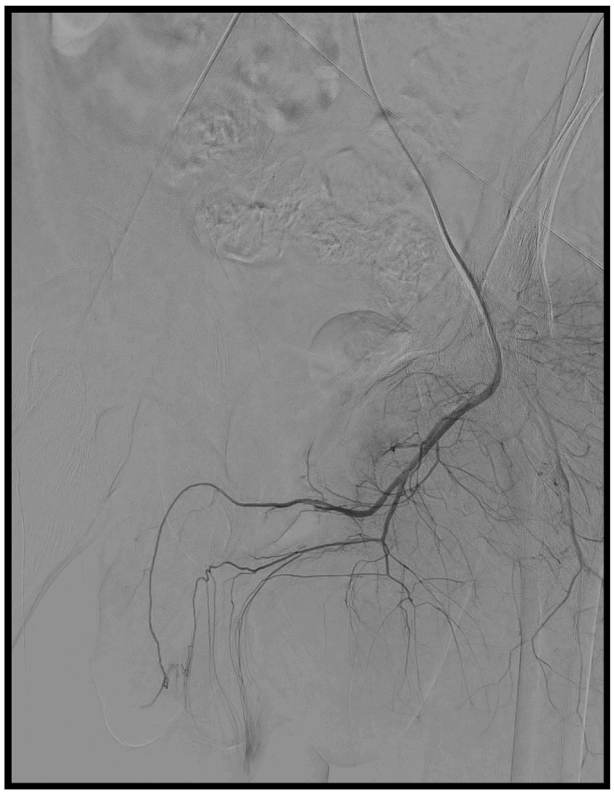

Fig. 1. Arteriography right side.

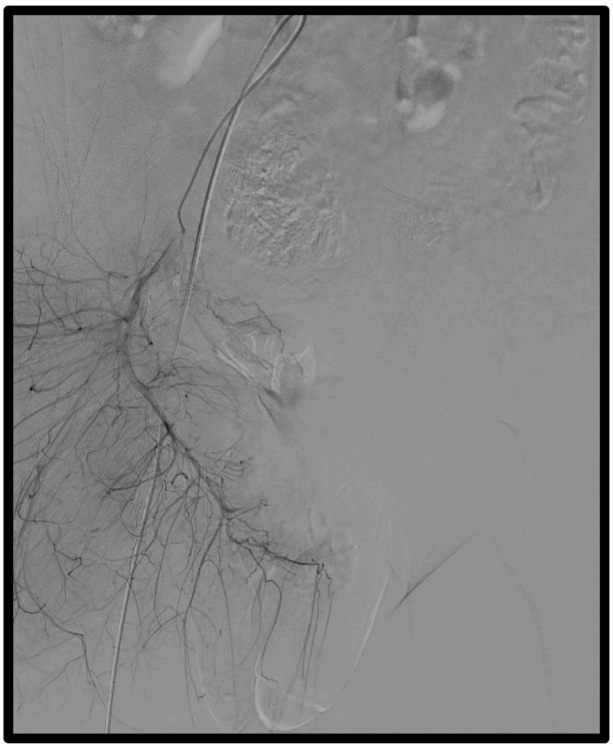

Fig. 2. Arteriography left side.

Discussion

Although thalassemia is associated with Erectile Dysfunction (ED), it is an unlikely cause of ED in this patient.

The most common pathway for thallasemia patients to develop ED is through transfusion, which leads to abnormal iron deposits, which can cause hypogonadism.[1] This is very unlikely in this transfusion naïve patient with normal testosterone levels and no clinical signs of hypogonadism.[1]

Even in transfusion naïve thalassemia patients, increased levels of ED are described.[2] This might be the result of low arginine and nitric oxide (NO) bioavailability because of membrane destruction and endothelial inflammation because of hemolysis.[3] An other hypothesis is that thalassemia may lead to vascular abnormalities such as decreased arterial blood flow, ischemia-induced vascular hypoperfusion and subsequent increased cavernous smooth-muscle contraction.[2] Still ED is a rare condition in transfusion naïve thalassemia patients, as only 5 out of 455 patients with thalassemia aged 20–49 years were reported to have ED.[3] The risk for ED increases with age and comorbidities[3] and thus it is an unlikely cause in a 19-year old with no comorbidities.

The most assumable explanation for this patient's lifelong ED is his congenital agenesis of the left cavernous artery which leads to an insufficient peak-flow to result in an erection.

Although Leriche associated ED with arterial insufficiency already in 1923, penile revascularization surgery is a rare treatment, with variable results for ED.[4] Because this patient suffered from a long, filiform zone of the a. cavernosa revascularization seemed technically very demanding and therefore a definitive solution with penile implant surgery was preferred.

With 60% of virgin implants being revision-free after 15-years,[5] penile implant surgery is a safe treatment for erectile dysfunction. Unfortunately for young patients, this means that they will need several revisions. Counseling is essential.

Conclusion

Penile implant surgery may be a good treatment for selected, well informed young patients with conservative therapy resistant erectile dysfunction. Severe hypogenisis of the cavernous artery can lead to an insufficient peak flow and therefore to erectile dysfunction, which was the case in this patient. Thalassemia comes with an increased risk for erectile dysfunction (overall risk 4.56-fold higher,[2] compared with baseline population). Still this is a rare cause of erectile dysfunction in young, transfusion-naïve patients.

Consent

A consent of the patient for publishing was obtained.

Declaration of competing interest

No conflict of interest to be declared.

References

1. Gabrielsen JS, Lamb DJ, Lipschultz LI. Iron and a man's reproductive health: the good, the bad, and the ugly. *Curr Urol Rep*. 2018;19:60.
2. Chen YG, Lin TY, Lin CL, et al. Risk of erectile dysfunction in transfusion-naive thalassemia men. *Medicine*. 2015;94(13), e700 (Baltimore).
3. Morris CR. Mechanisms of vasculopathy in sickle cell disease and thalassemia. *Hematology*. 2008:177–185. the Education Program of the American Society of Hematology American Society of Hematology Education Program.
4. Hsieh CH, Hsu GL, Chang SJ, et al. Surgical niche for the treatment of erectile dysfunction. *Int J Urol*. 2019;27(2):117–133.
5. Wilson SK, Delk JR, Salem EA, et al. Long-term survival of inflatable penile protheses: single surgical group experience with 2,384 first-time implants spanning two decades. *J Sex Med*. 2007;4(4):1074–1079.