

# Traitement endovasculaire d'un anévrisme de l'aorte abdominale avec sténose iliaque

## Endovascular management of abdominal aortic aneurysm with iliac stenosis

Ben Jmaà Hèla<sup>1</sup>, Dhoub Faten<sup>2</sup>, Seddik Mohamed<sup>3</sup>, Dammak Aiman<sup>4</sup>, Mhiri Fatma<sup>4</sup>, Frikha Imed<sup>4</sup>

*Chirurgie cardio-vasculaire de Sfax, Habib Bourguiba de Sfax, Tunisie1, cardiologie de gabes, hopital de gabes, Tunisie2, chirurgie cardio-vasculaire de sfax, habib bourguiba de sfax, Tunisie3, chirurgie cardio-vasculaire de sfax, habib bourguiba de sfax, Tunisie4*

### ABSTRACT

Endovascular aneurysm repair is less invasive than conventional surgery, and is associated with a low 30-day mortality rate.

Procedures such as angioplasty of the iliac artery can be performed prior to EVAR.

We report the case of bifurcated stent-graft repair of an abdominal aortic aneurysm without the use of need of iliac angioplasty in a high-surgical octogenarian patient with tight iliac arteries stenosis

### KEYWORDS

abdominal aortic aneurysm; iliac artery stenosis; surgery; bifurcated endoprosthesis; angioplasty.

### SUMMARY

La réparation endovasculaire des anévrismes est moins invasive que la chirurgie conventionnelle, et elle est associée à un taux de mortalité opératoire faible.

Des procédures d'angioplastie iliaque peuvent être pratiquées avant l'EVAR, en cas de lésions iliaques associées vu la difficulté de l'accès vasculaire dans ce cas.

Nous rapportons le cas de mise en place d'une endoprothèse bifurquée de l'aorte abdominale sans recours à une angioplastie préalable, chez un patient octogénaire à haut risque opératoire ayant des voies d'accès calcifiées et sténosées.

### MOTS-CLÉS

anévrisme de l'aorte abdominale; sténose artérielle iliaque; chirurgie; endoprothèse bifurquée; angioplastie

### Correspondance

Hèla Ben Jmaà

Department of cardiovascular and thoracic surgery Habib Bourguiba Hospital Sfax Tunisia postal code: 3029.

Email : benjmaa\_hela@medecinesfax.org / Hela.benjmaa@rns.tn

## INTRODUCTION

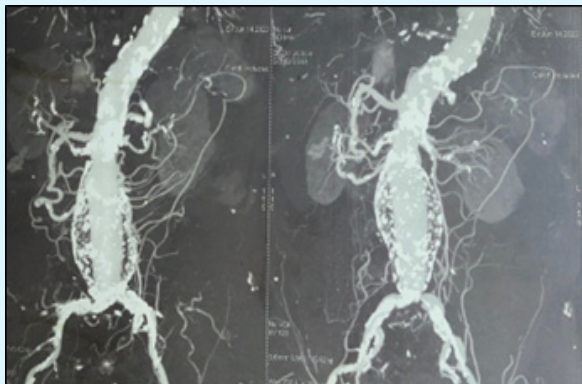
Treatment of patients with abdominal aortic aneurysms and iliac artery disease is complex. There are difficulties for endovascular access. Recanalization or angioplasty of iliac arteries at the time of EVAR is an option, which avoids complex surgery in operative high risk patients.

We report a case of patient with abdominal aortic aneurysm and iliac severe stenosis, who was successfully treated with EVAR without the need of iliac angioplasty.

## CASE REPORT

A 88-year-old man, with high blood pressure, right leg intermittent claudication, was admitted to our department for a large aortic abdominal aneurysm measuring 5,5 cm. In his past-medical history, he underwent a coronary artery bypass grafting five years ago.

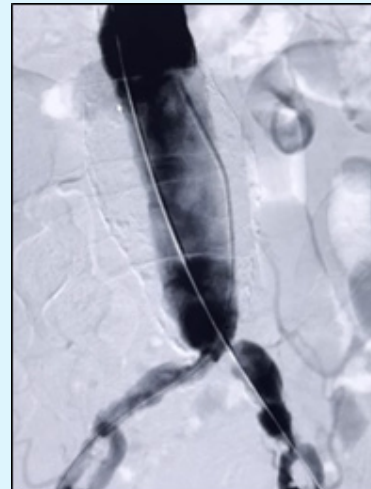
Preoperative CT scan showed also a tight stenosis of the both common iliac arteries, with tortuosity and calcifications of the right iliac artery (figure 1).



**Figure 1.** CT scan showing severe stenosis in the common iliac arteries, with tortuosity and calcifications of the right iliac artery (arrows).

Because of the old age, and the high operative risk, endovascular treatment of the aneurysm was decided. Surgery was performed under general anesthesia, with surgical exposure of both femoral arteries.

The catheterization of the iliac arteries was performed with super-stiff guidewires without need of angioplasty and stenting (figure 2).



**Figure 2.** Angiography view showing the catheterization of the iliac arteries with super-stiff guidewires



**Figure 3.** Angiography view showing the exclusion of the aneurysm with a bifurcated endoprosthesis.

The aneurysm was excluded with bifurcated endoprosthesis (figure 3). There were no intraoperative or postoperative complications.

At 10 months, follow-up CT showed no evidence of endoleak.

## DISCUSSION

Patients with abdominal aortic aneurysm and comorbidities are high-risk candidates for open operations and endovascular therapy has proven its benefit in these cases [1]. The association with atherosclerotic occlusive lesions in ilio-femoral arteries are frequent.

The incidence of peripheral arterial disease with concomitant abdominal aortic aneurysm ranges between 10% and 40% [2].

These patients with these combined diseases have been excluded from EVAR as total iliac occlusive lesions are TransAtlantic Inter-Society Consensus (TASC) D lesions for which open repair is typically required for such lesions [3].

Then, the option for treatment of these aneurysms with iliac stenosis was endovascular repair with an aorto-mono-iliac stent-graft, with or without a femoro-femoral bypass. Now, the evolution of endovascular techniques has a profound impact on the management of aortic aneurysms [4].

To perform bifurcated endoprosthesis, ilio-femoral occlusive disease can block the introduction of guidewires and/or the delivery system for EVAR [5]. Total endovascular repair by recanalization of the occluded iliac system allows the use of a bifurcated stent-graft and avoids the complications of an additional bypass procedure.

Vallabhaneni et al [6] reported a technical success rate of 93.3% when using endovascular recanalization.

Our present report describes successful EVAR without iliac dilatation, by super-stiff guidewires in an octogenarian patient.

## CONCLUSION

Endovascular aneurysm repair is a revolutionary development in the treatment of abdominal aortic aneurysms. However, unfavorable anatomy of the aneurysm with stenosis and tortuosity of the iliac arteries are a challenge to vascular surgeons.

## REFERENCES

1. Randall W. Franz, M. Taha Ibrahim, Christopher F. Tanga, David A. Epstein. Endovascular Treatment of Abdominal Aortic Aneurysm with Complete Iliac Occlusion: Case Series and Literature Review. *Int J Angiol* 2017; 26: 259-263.
2. Wanhainen A, Bergqvist D, Boman K, Nilsson TK, Rutegard J, Bjorck M Risk factors associated with abdominal aortic aneurysm: a population-based study with historical and current data. *J Vasc Surg* 2005 ; 41: 390-396.
3. Arko FR, Filis KA, Seidel SA, et al. Howmany patients with infrarenal aneurysms are candidates for endovascular repair ? The Northern California experience. *J Endovasc Ther* 2004; 11(01): 33–40.
4. Wu N, Liu C, Fu Q, et al. Endovascular aneurysm repair in emergent ruptured abdominal aortic aneurysm with a 'real' hostile neck and severely tortuous iliac artery of an elderly patient. *BMC Surg* 2014; 14: 11.
5. James Scurr, Thien How, S. Rao Vallabhaneni, Francesco Torella, and Richard G. McWilliams. EVAR in Iliac Occlusion. *J Endovasc Ther* 2007 ; 14: 59–61.
6. Vallabhaneni R, Sorial EE, Jordan WD, Minion DJ, Farber MA. Iliac artery recanalization of chronic occlusions to facilitate endovascular aneurysm repair. *J Vasc Surg* (2012) 56: 1549-1554.