KĨ THUẬT BÍT PHÌNH LÒNG GIẢ CHO BỆNH LÝ LÓC ĐỘNG MẠCH CHỦ TYPE B MẠN TÍNH BẰNG DỤNG CỤ TỰ CHẾ CANDY-PLUG MODIFY

Bs Nguyễn Tùng Sơn
Nhóm Động mạch chủ (Aortic Team)
BV hữu nghị Việt Đức

TOPIC: KĨ THUẬT BÍT PHÌNH LÒNG GIẢ CHO BỆNH LÝ LÓC ĐỘNG MẠCH CHỦ TYPE B MẠN TÍNH BẰNG DỤNG CỤ TỰ CHẾ CANDY-PLUG MODIFY

Non – disclosure

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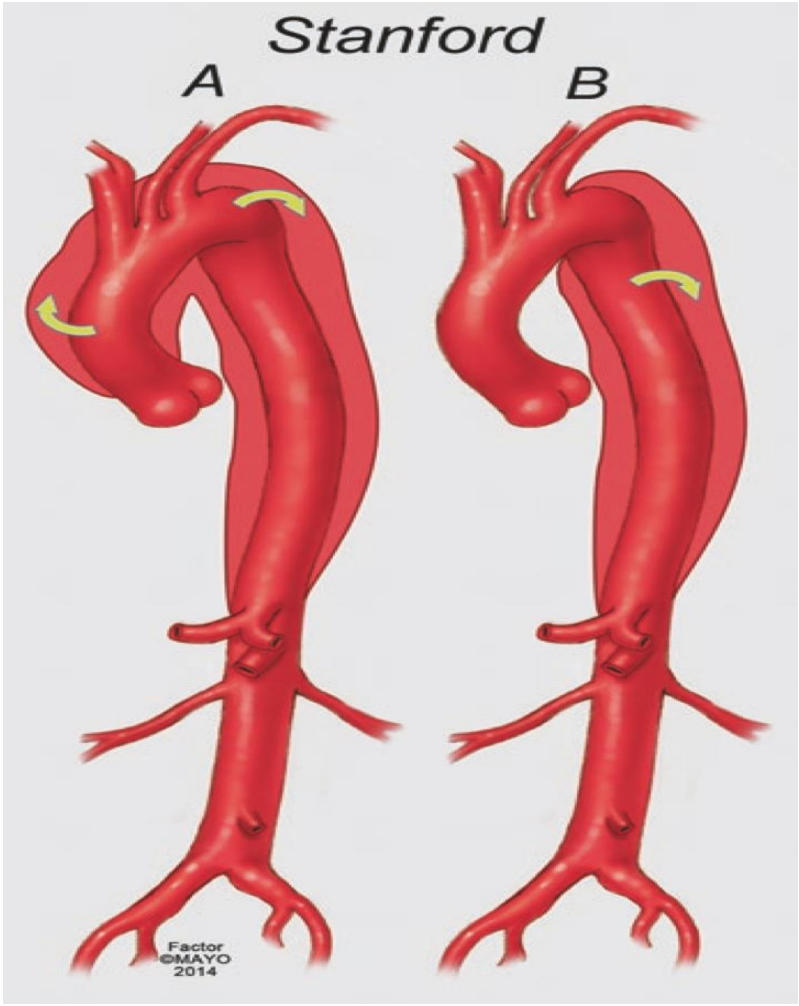
MEMBERSHIPS AND ASSOCIATIONS
Member of Vietnam Cardiovascular Surgery Association.
Member of Vietnam Cardiovascular Association.
Member of Vietnam Vascular Disease Association – VNVDA
Member of Aortic Association.

I. Tổng quan

- **Type B aortic dissection**: is result of a tear in the intimal arterial layer, creates a flap, which divides the aorta into a true lumen (TL) and a false lumen (FL).



Stanford classification of aortic dissection

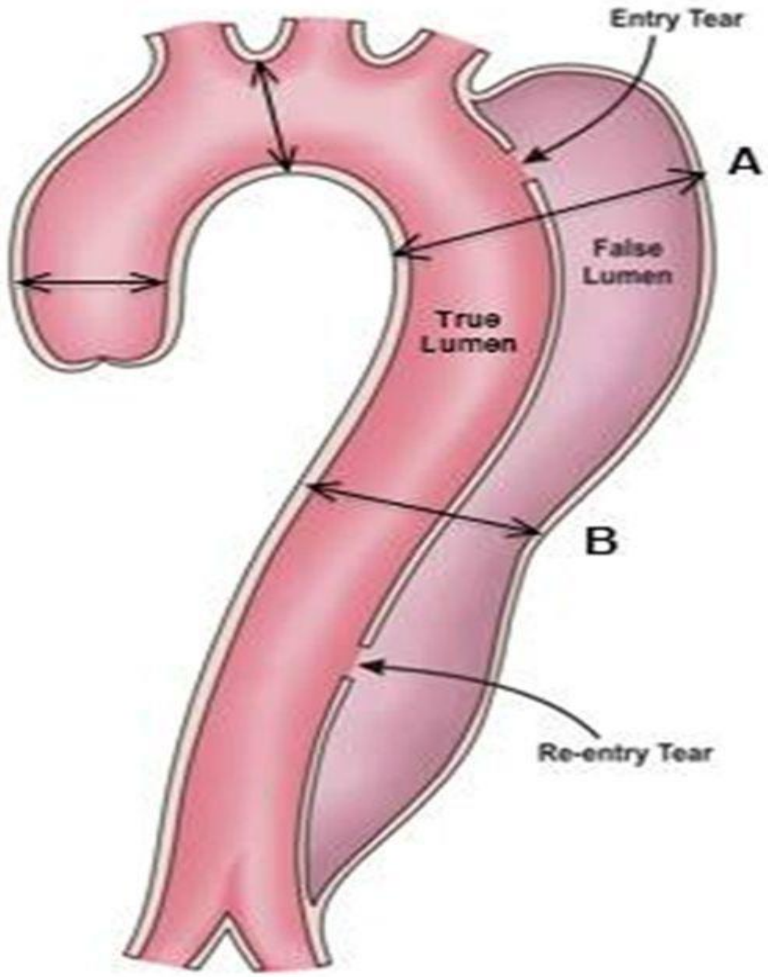
- **Timing:**

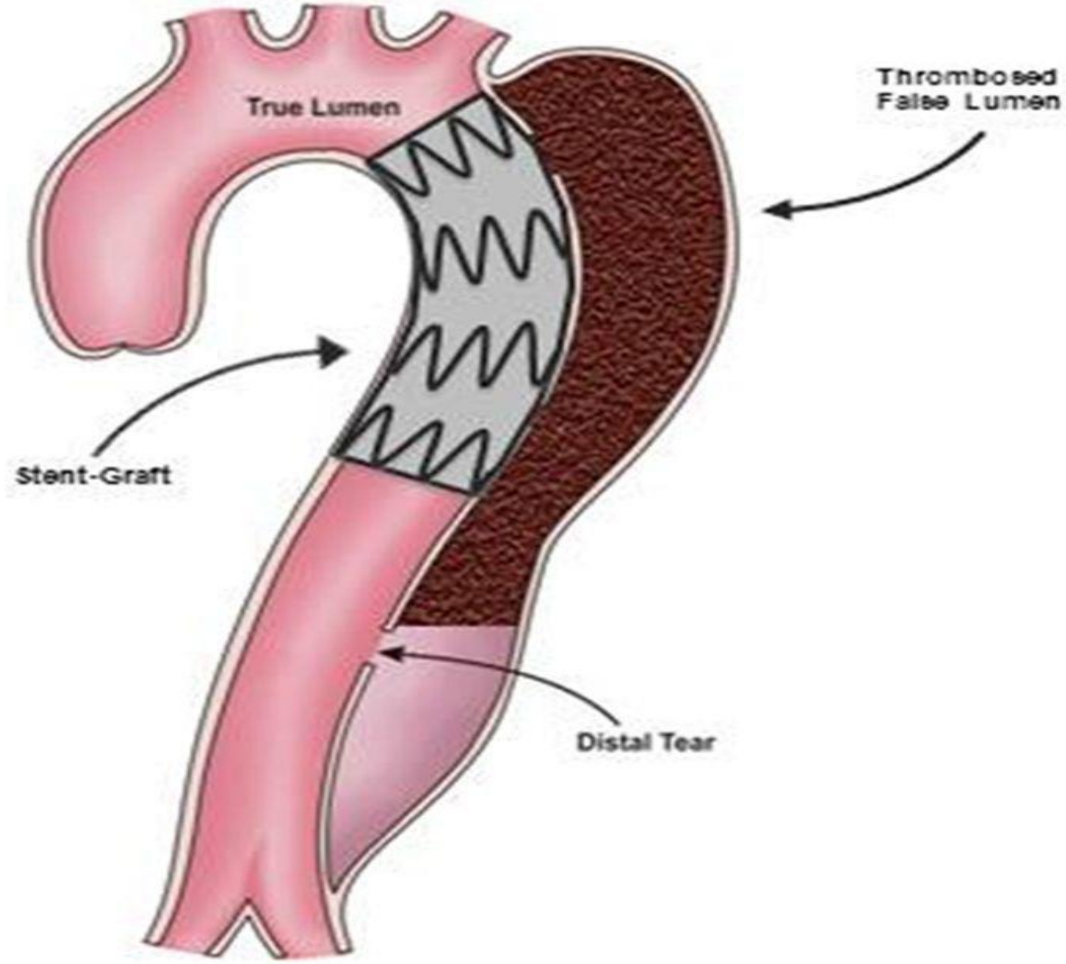
+ Acute: < 14 days.

+ Sub acute: 15-90 days.

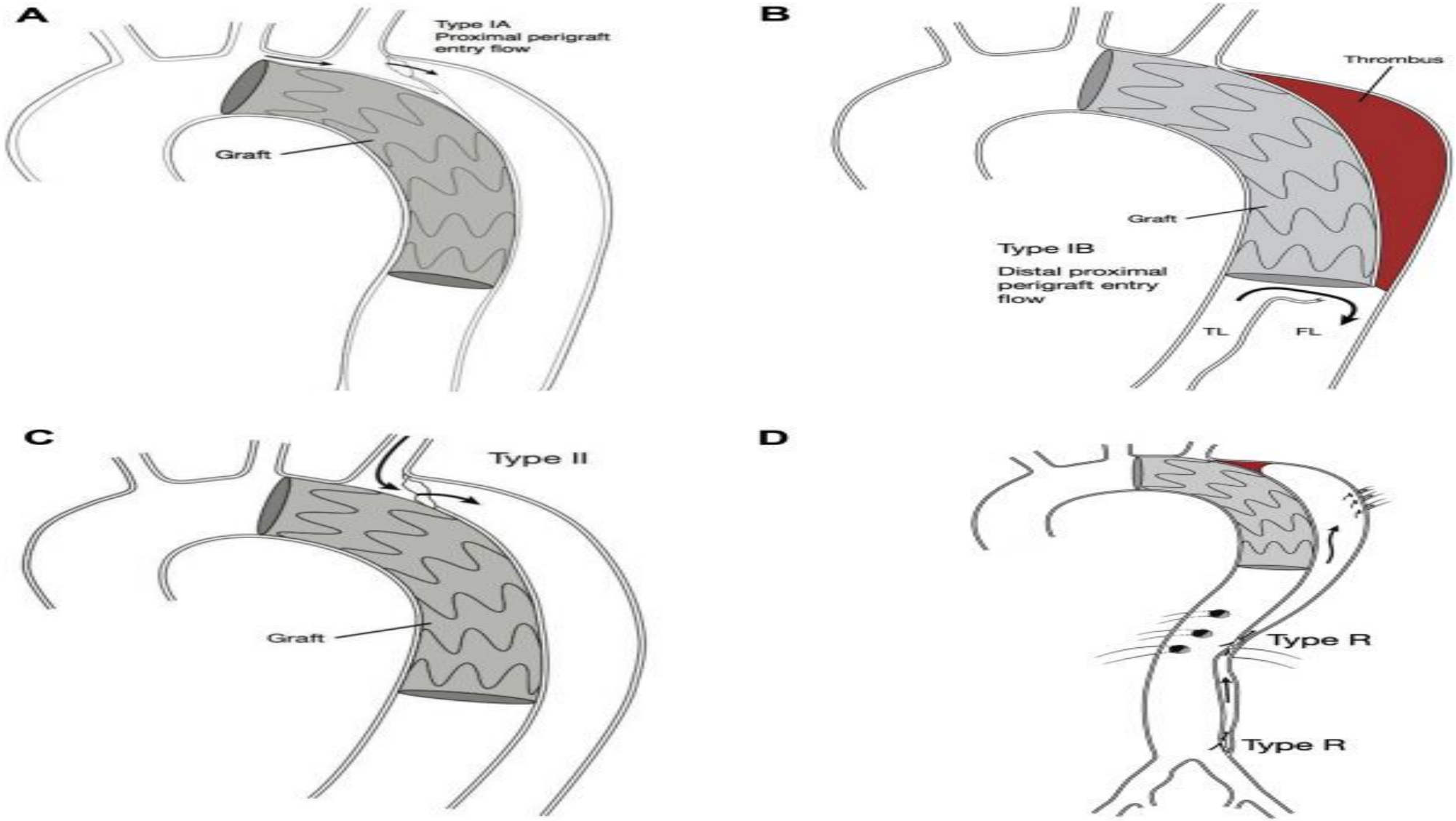
+ Chronic: > 90 days.

I. Tổng quan

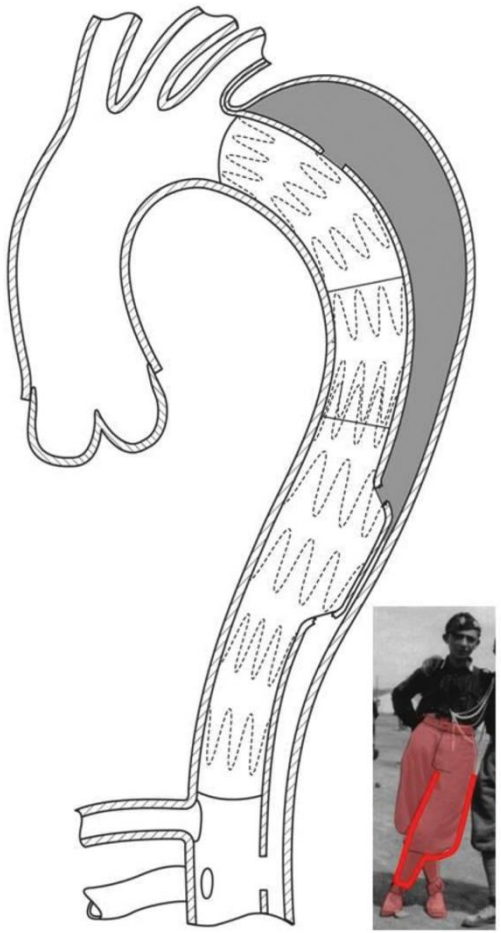

Entry Tear
A
False Lumen
True Lumen
B
Re-entry Tear

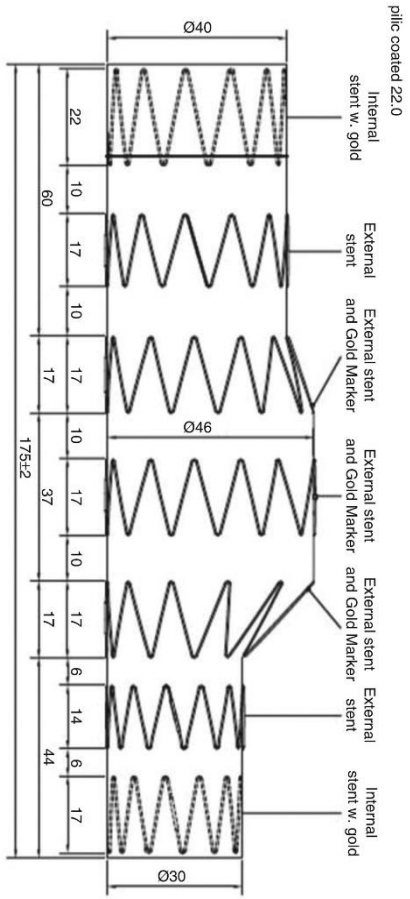

True Lumen
Thrombosed False Lumen
Stent-Graft
Distal Tear

I. Tổng quan


A
Type IA
Proximal perigraft
entry flow
Graft
B
Thrombus
Graft
Type IB
Distal proximal
perigraft entry
flow
TL
FL
C
Type II
Graft
D
Type R
Type R

I. Tổng quan




pilic coated 22.0
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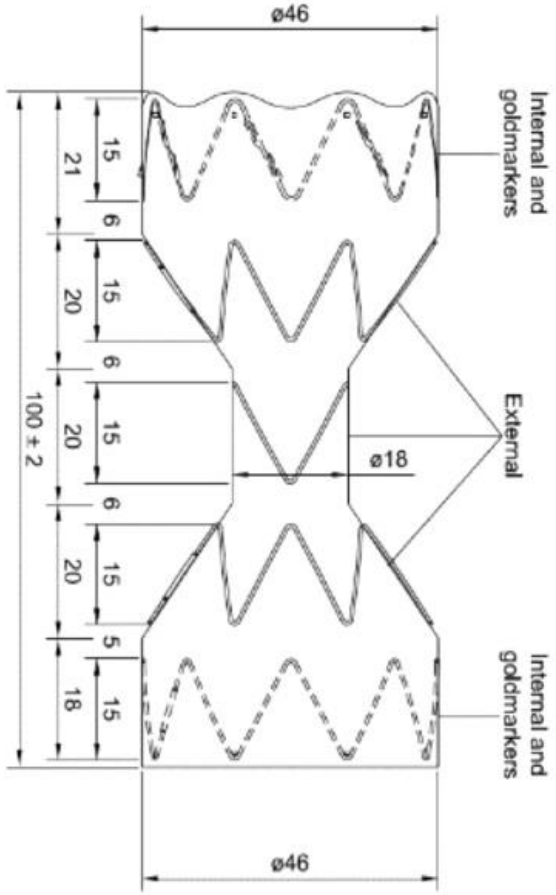
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External
ø18
Internal and goldmarkers
ø46
100 ± 2
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Các bài báo quốc tế

EJVES Short Reports (2019) 44, 44–47

CASE REPORT

False Lumen Embolization with the Candy Plug Technique for Consumptive Coagulopathy after Aortic Repair for Chronic Dissection

Shota Hasegawa *, Yoshikatsu Nomura, Hirohisa Murakami

Hyogo Brain and Heart Center, Himeji, Hyogo, Japan

Introduction: Chronic aortic dissection rarely causes consumptive coagulopathy due to disseminated intravascular coagulation (DIC).

Report: A 69 year old man who had previously undergone total arch replacement with the frozen elephant trunk procedure for chronic aortic dissection was transferred to our hospital because of sudden back pain. He had a bleeding from the right subscapular artery due to consumptive DIC caused by retrograde blood flow into a residual false lumen (FL). Percutaneous transcatheter embolisation was successfully performed, but DIC findings persisted. Thoracic endovascular aortic repair and FL embolisation with the candy plug technique were performed. Subsequently, DIC improved and FL thrombosis was safely accomplished.

Discussion: In this case, FL thrombosis was safely accomplished with the candy plug technique. This strategy expands options in patients with high risk for open repair.

Article history: Received 7 March 2019, Revised 26 July 2019, Accepted 30 July 2019,

Keywords: Candy plug technique, Chronic aortic dissection, Disseminated intravascular coagulation

False lumen embolization in chronic aortic dissection promotes thoracic aortic remodeling at midterm follow-up

Check for updates

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ABSTRACT

Objective: Failure of thoracic endovascular aortic repair (TEVAR) in chronic aortic dissections can be partially explained by retrograde false lumen (FL) flow through distal re-entry tears. After implantation of a thoracic stent graft, FL thrombosis occurs in less than 50% of the cases. The objectives of this study were to describe the feasibility and outcomes of FL embolization in patients with chronic aortic dissections.

Methods: Between June 2015 and January 2018, 27 patients (mean age, 61 ± 14 years) with chronic aortic dissection underwent FL embolization as an adjunct during or after TEVAR placement procedure. Indications for embolization were (1) symptomatic chronic aortic dissections with pain or rapid growth of aortic diameter (≥5 mm/y) requiring rapid exclusion of the aneurysm, (2) aneurysmal dilatation with persistent FL retrograde flow after TEVAR, and (3) large FL aneurysms (≥55 mm) that might lead to persistent retrograde flow. Twenty patients presented with type B chronic aortic dissections (74.1%) and seven presented a residual type A chronic aortic dissections (25.9%). Eight patients had a previous aortic arch replacement (29.6%). Six patients had previous repair with TEVAR (22.2%). The delay between the onset of dissection and the first endovascular repair was 47 months (range, 3-144). Spinal fluid drainage was used in 74.1% of cases (20/27 patients). Embolization devices included coils and vascular plugs.

Results: The technical success rate was 100% (27/27). Complete spinal cord ischemia was observed in one patient (3.7%). There was one hospital death from pneumonia after zone 1 supra-aortic trunk debranching with TEVAR and embolization. After the index procedure, FL thrombosis was observed in 81.5% of patients (22/27) on late phase computed tomography angiography. Five patients required two or more embolization procedures, leading to a high rate of complete FL thrombosis (92.6%). One patient presented a type IB endoleak and one patient presented a type II endoleak. Radiologic follow-up was 20 ± 10 months. The maximum thoracic aortic diameter significantly decreased from 63 mm to 54 ± 10 mm ($P < .001$).

Conclusions: Embolization of the FL of chronic aortic dissections is technically feasible with a low morbidity rate. The FL thrombosis is observed in the majority of case and promotes favorable thoracic aortic remodeling. Longer follow-up is needed to confirm these good results on the thoracic aorta and this technique may, therefore, improve the results of TEVAR in chronic aortic dissections. (J Vasc Surg 2019;70:710-7.)

Keywords: Chronic aortic dissection; TEVAR; False lumen thrombosis; Embolization

Modified candy-plug device for aneurysmal false lumen occlusion in chronic type B aortic dissection

CrossMark

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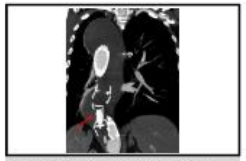
0022-5223/$36.00

https://doi.org/10.1016/j.jtcvs.2017.12.122



Multiplanar reconstruction showing complete FL thrombosis above the modified candy-plug device (arrow) with the diameter-restricting tube waist.

Central Message

The candy-plug technique facilitates complete false occlusion by prohibiting distal FL backflow. The current modification of a candy-plug waist makes this technique more precise and durable.

See Editorial Commentary page 1973.

Supplemental material is available online.

Video clip is available online.

In patients with chronic type B aortic dissection aneurysm (CTBAD) with false lumen (FL) aneurysm, thoracic endovascular aneurysm repair (TEVAR) has been increasingly performed by covering the proximal entry alone. However, one of the most common delayed complications is continued FL perfusion with aneurysmal dilatation from the distal fenestration.[1] Complete FL thrombosis after TEVAR for CTBAD can be achieved by covering the proximal primary tear alone in only 55% to 88% patients.[2] Retrograde FL perfusion can be occluded using simple methods, including standard embolization materials, candy-plug, and Knickerbocker techniques.

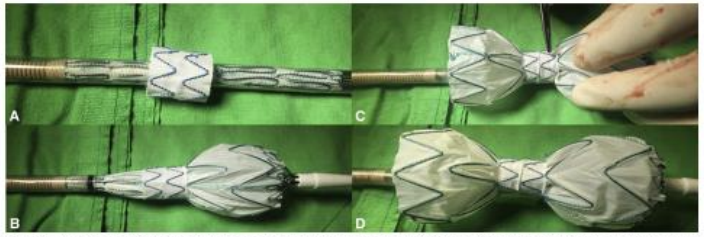
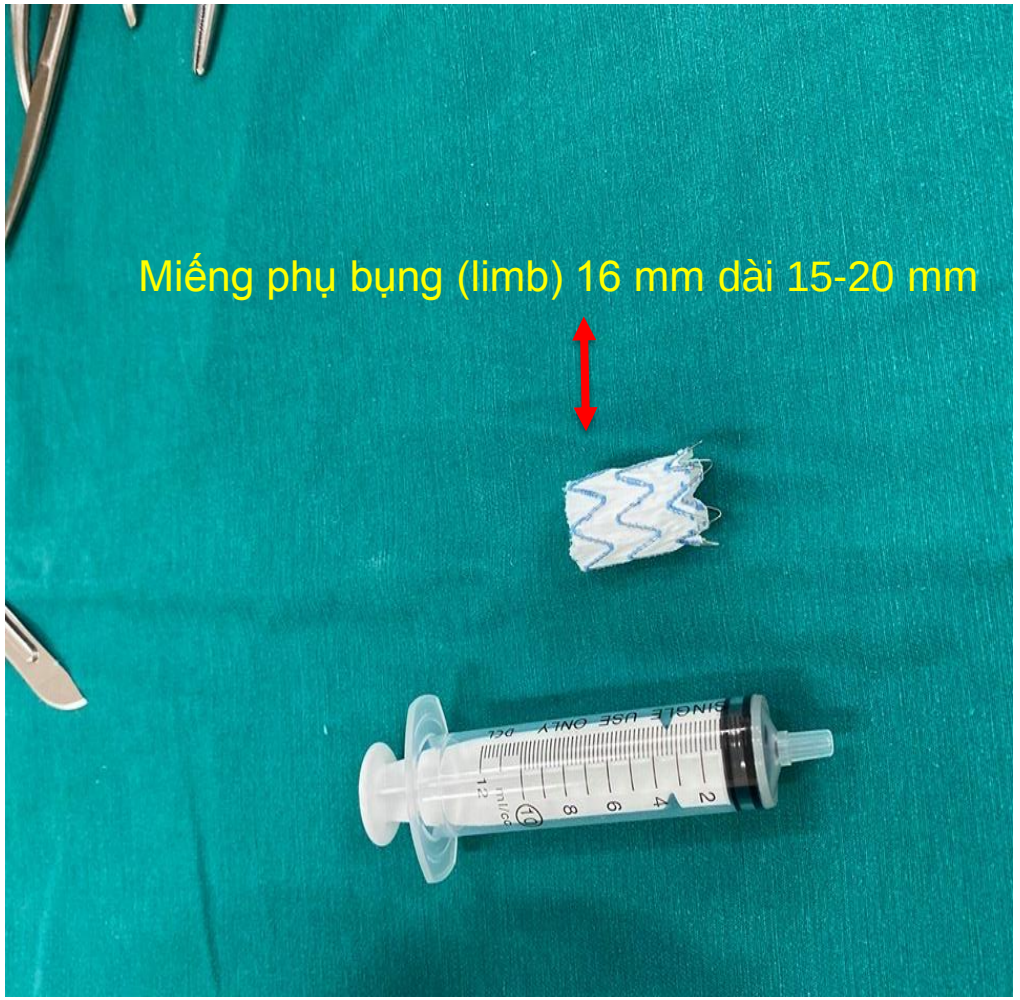


FIGURE 1. A, Trimmed iliac limb (2 cm) was positioned in the middle of the thoracic SG and (B) telescoping the thoracic SG. C, Stay sutures were placed at both sides of the iliac limb. D, The diameter-restricting tube waist in the middle of the SG was wide enough to retrieve the dilator tip of the delivery system.

→ Kĩ thuật bít lòng giả là thủ thuật hiệu quả trong việc huyết khối lòng giả và tái cấu trúc ĐMC trong bệnh lý lóc ĐMC type B mạn tính

II. Kĩ thuật tạo dụng cụ Candy-Plug tự chế



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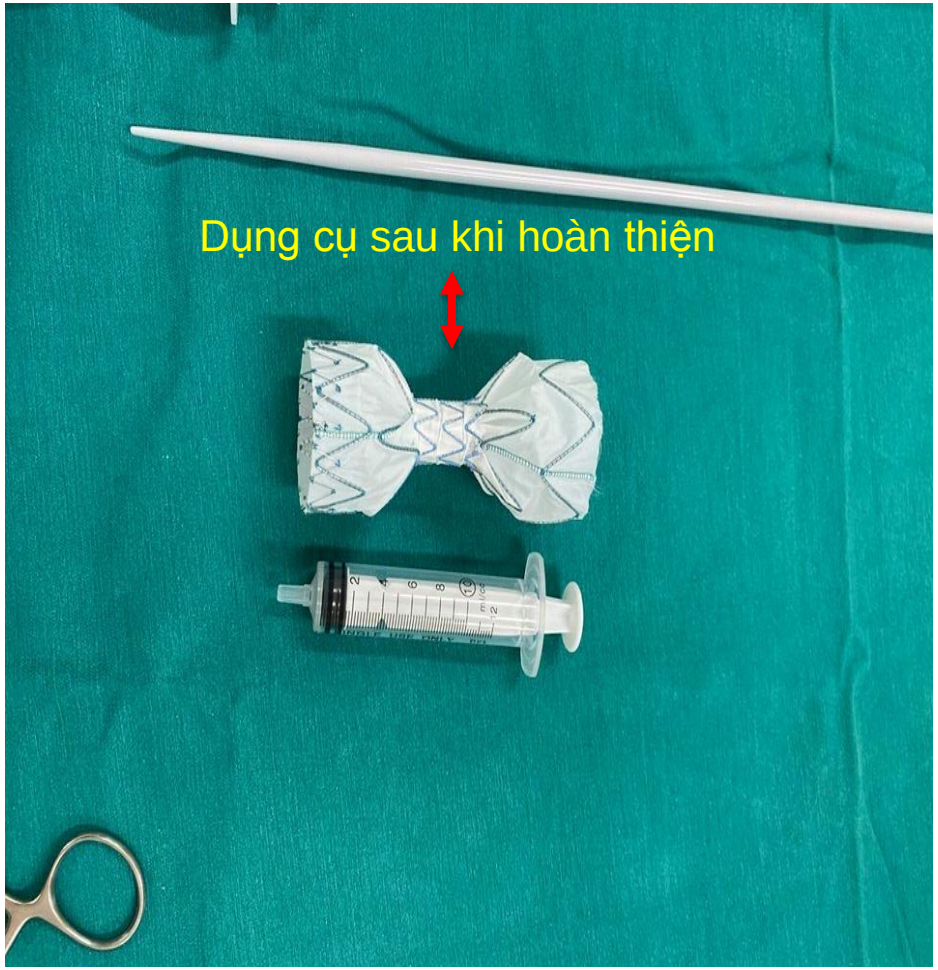

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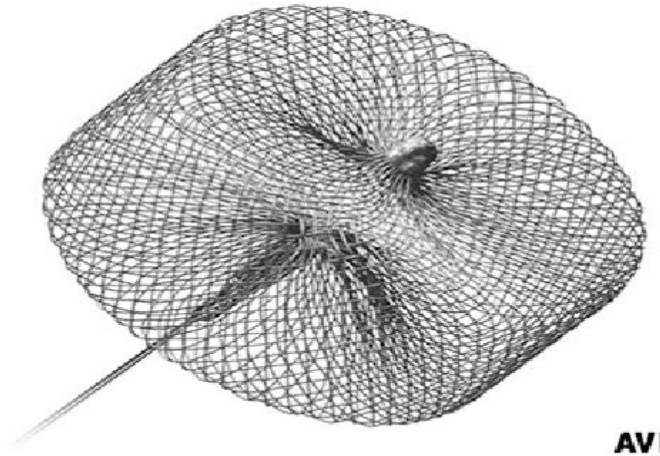
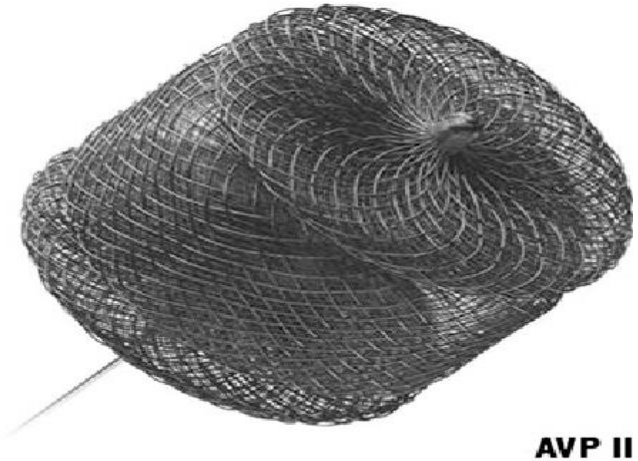
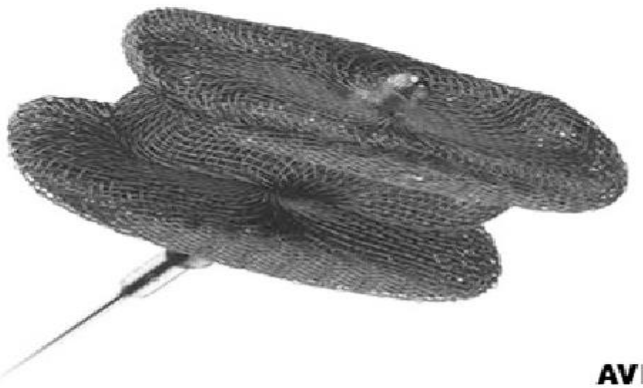


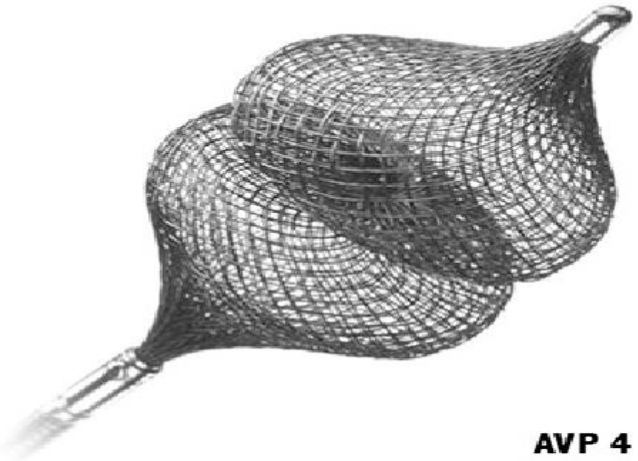
AVP



AVP II

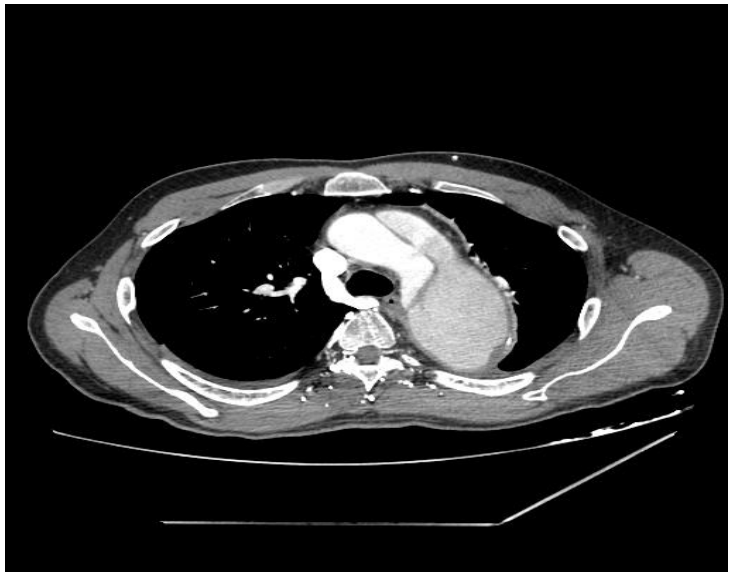


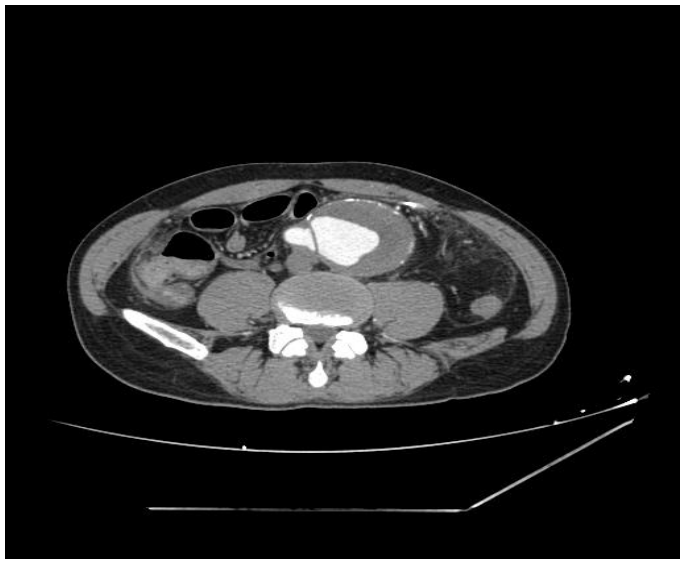
AVP III



AVP 4

II. Kĩ thuật tạo dụng cụ Candy-Plug tự chế





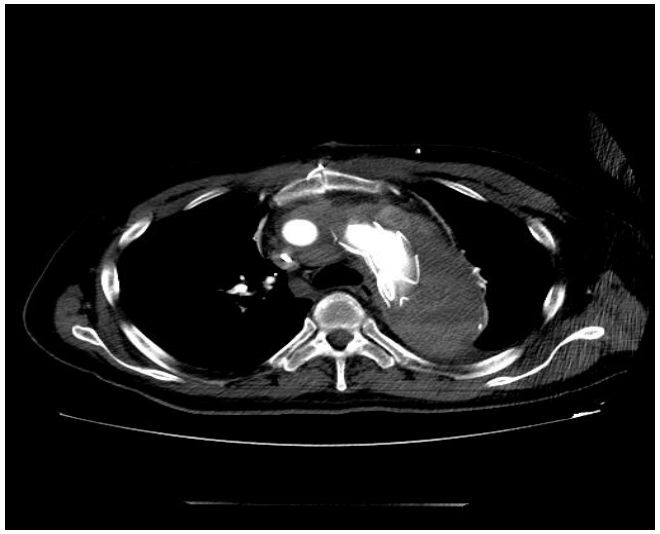
- Nam,37T
- THA,TBMN do XHN đã đặt DL NT - ổ bụng

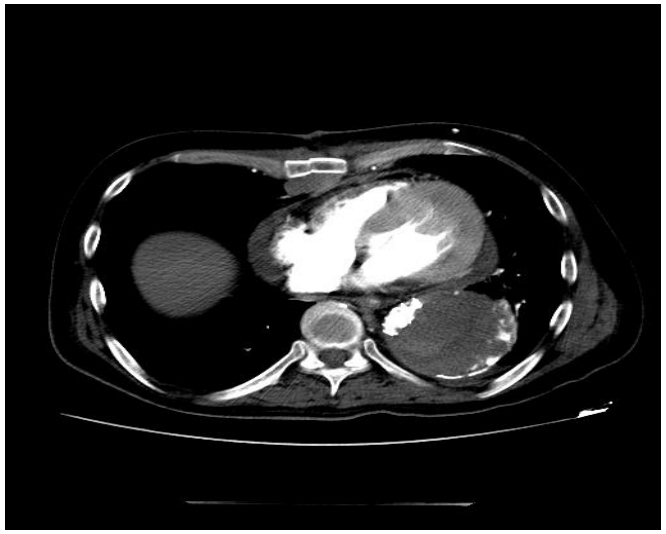
→ CĐ: Lóc ĐMC type B mạn tính có biến chứng phình lớn ĐMCx/THA – TBMN đã DL NT - ổ bụng/Quai ĐMC Bovine

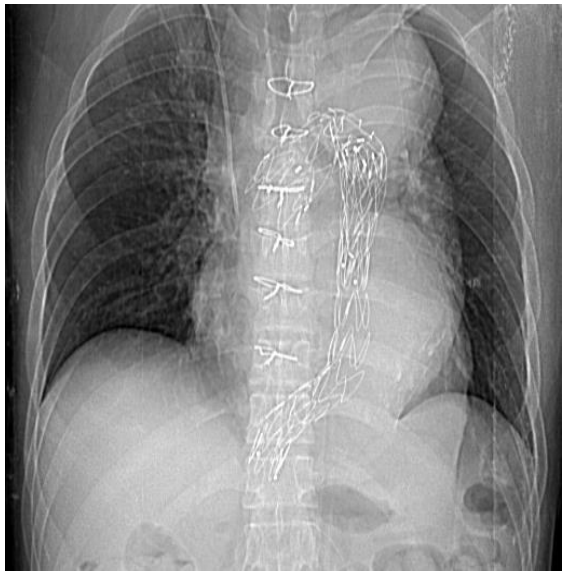
→ Plan:

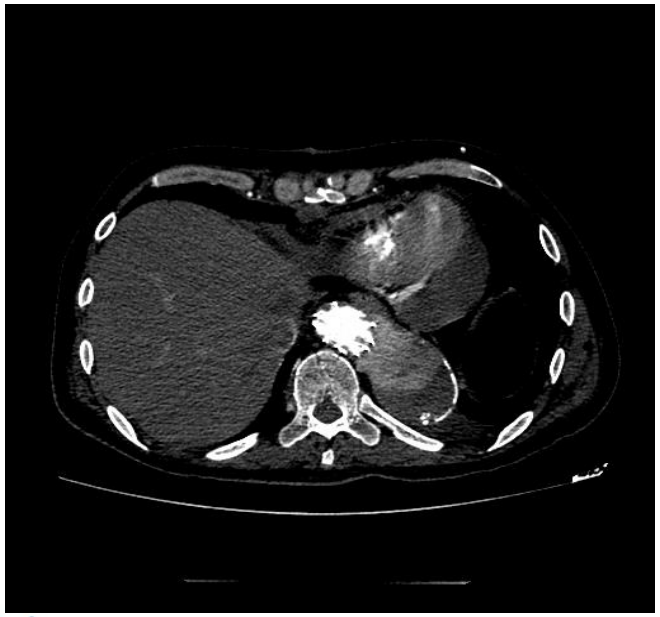
- 1st: Hybrid procedure: Total Debraching Supra-aortic Vessels and TEVAR
- 2nd: Follow-up 1-3 months → Candy-Plug Device (bít dòng trào ngược lòng giả)
- 3rd: PT thay đoạn ĐMCB trên và dưới thận

II. Kĩ thuật tạo dụng cụ Candy-Plug tự chế





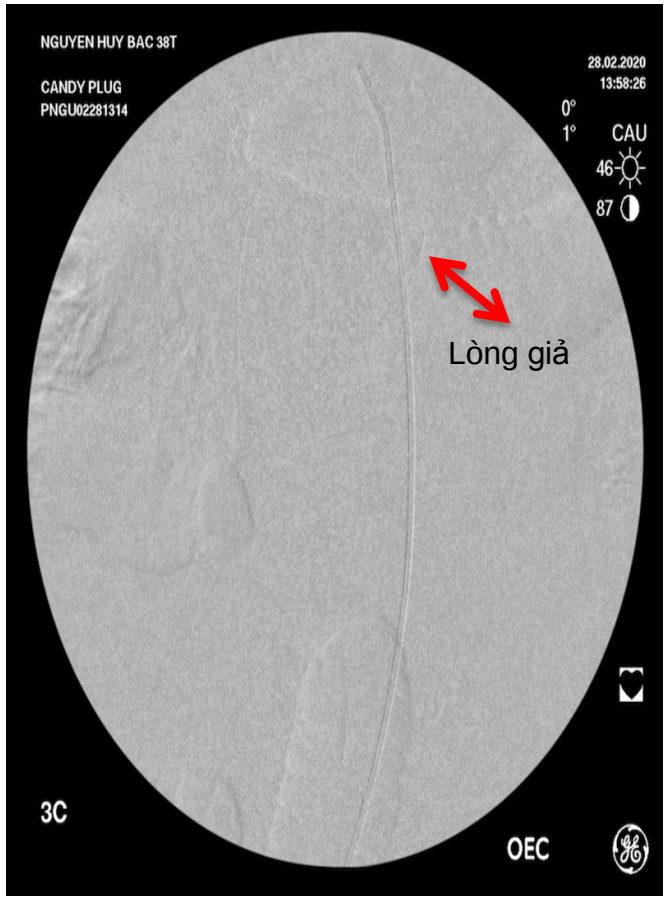


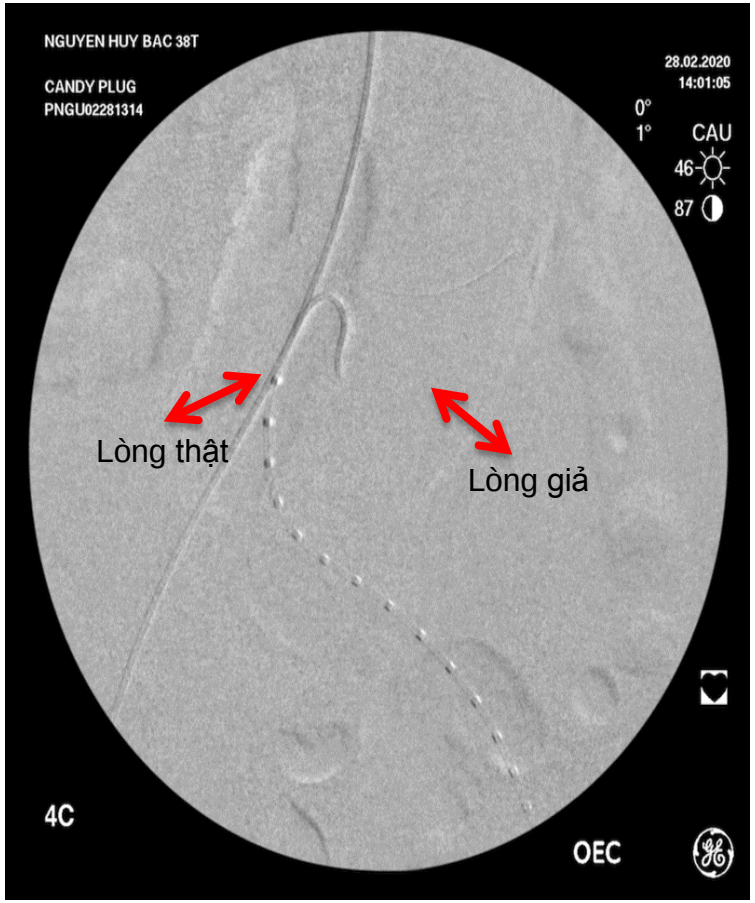


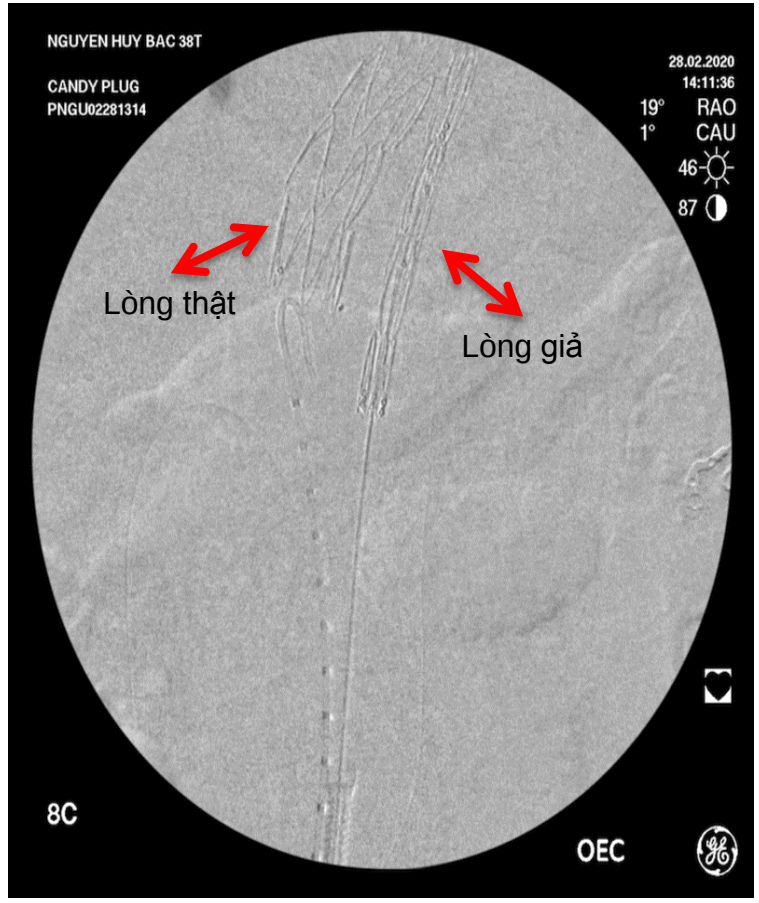
- Follow-up sau 3 tháng

→ Endoleak type R lớn vào lòng giả gây tăng kích thước ĐMC xuống

II. Kĩ thuật tạo dụng cụ Candy-Plug tự chế







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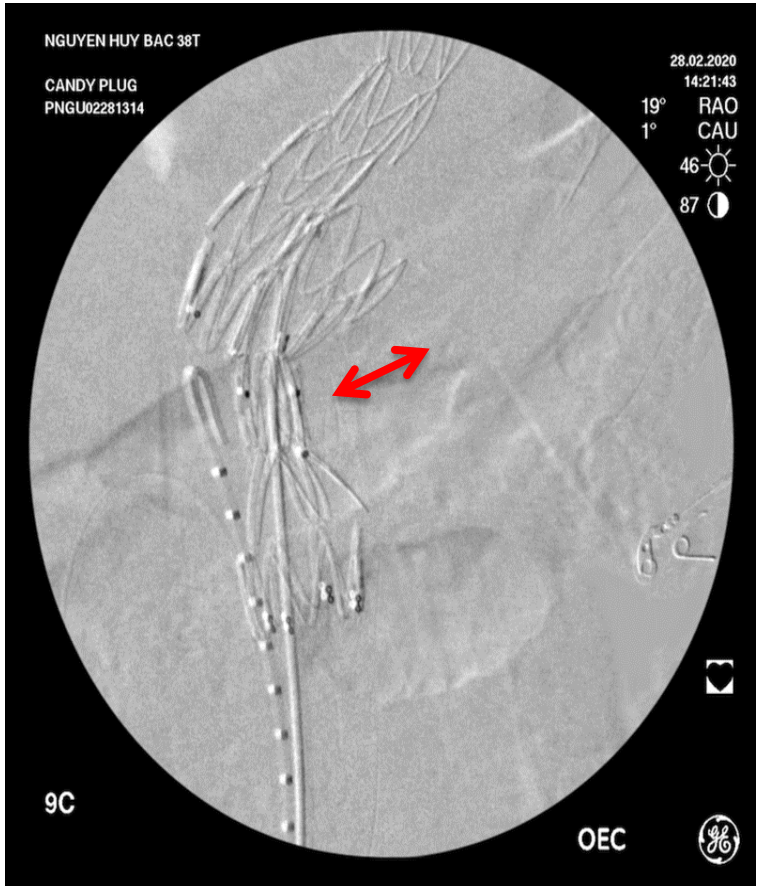

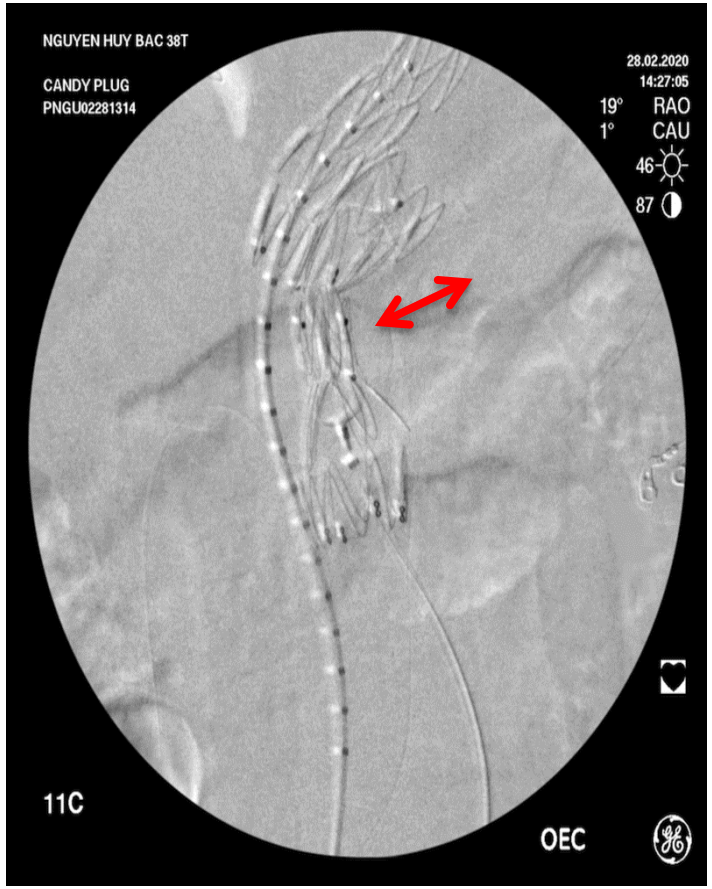

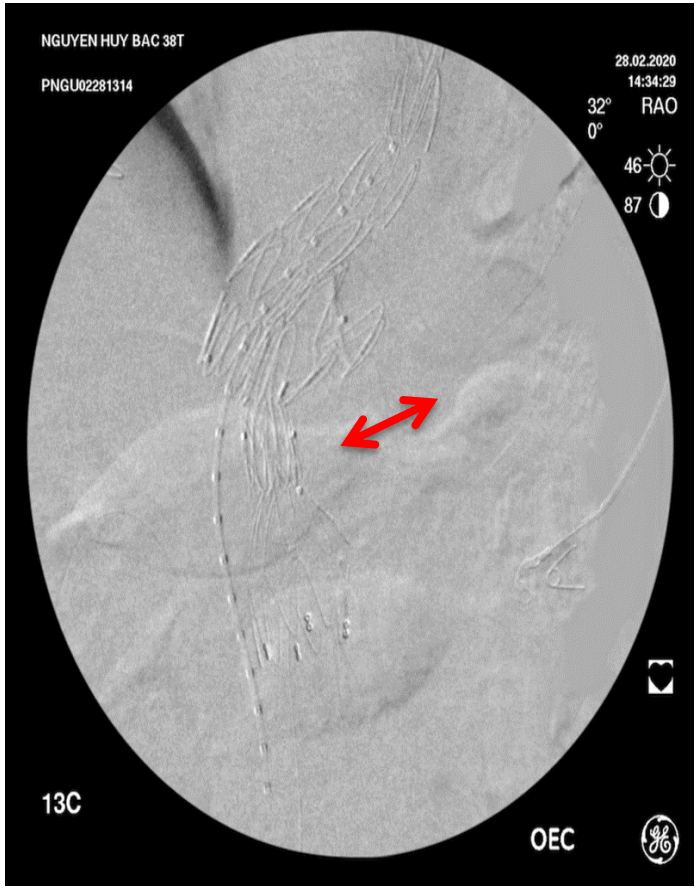

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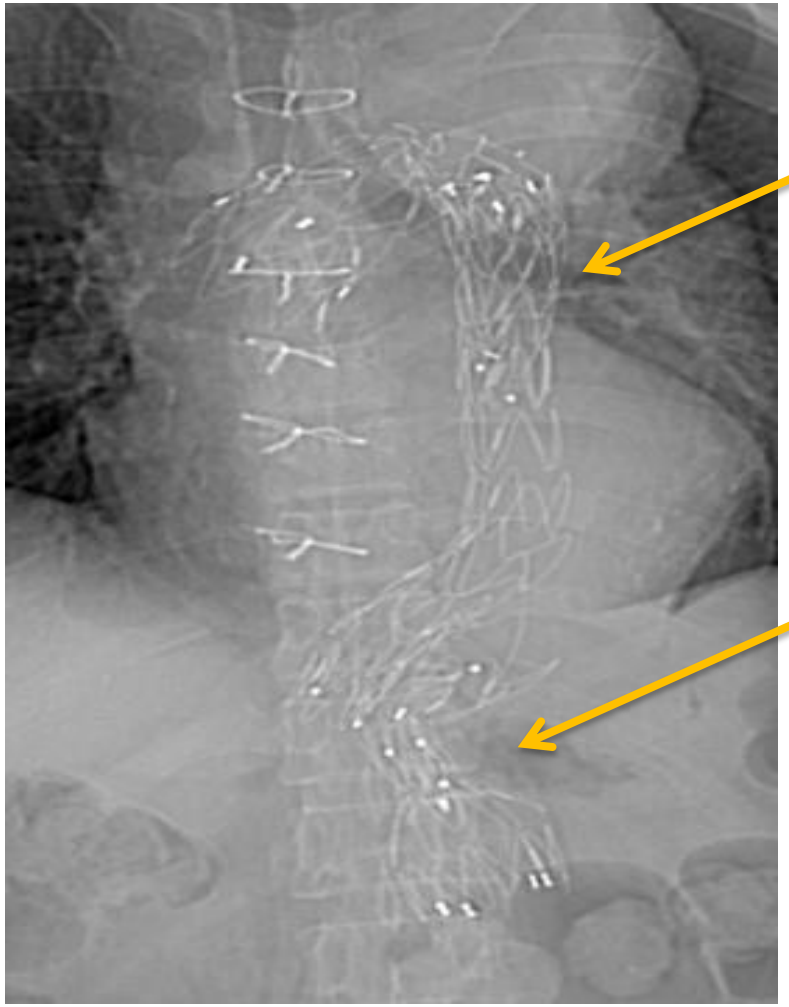

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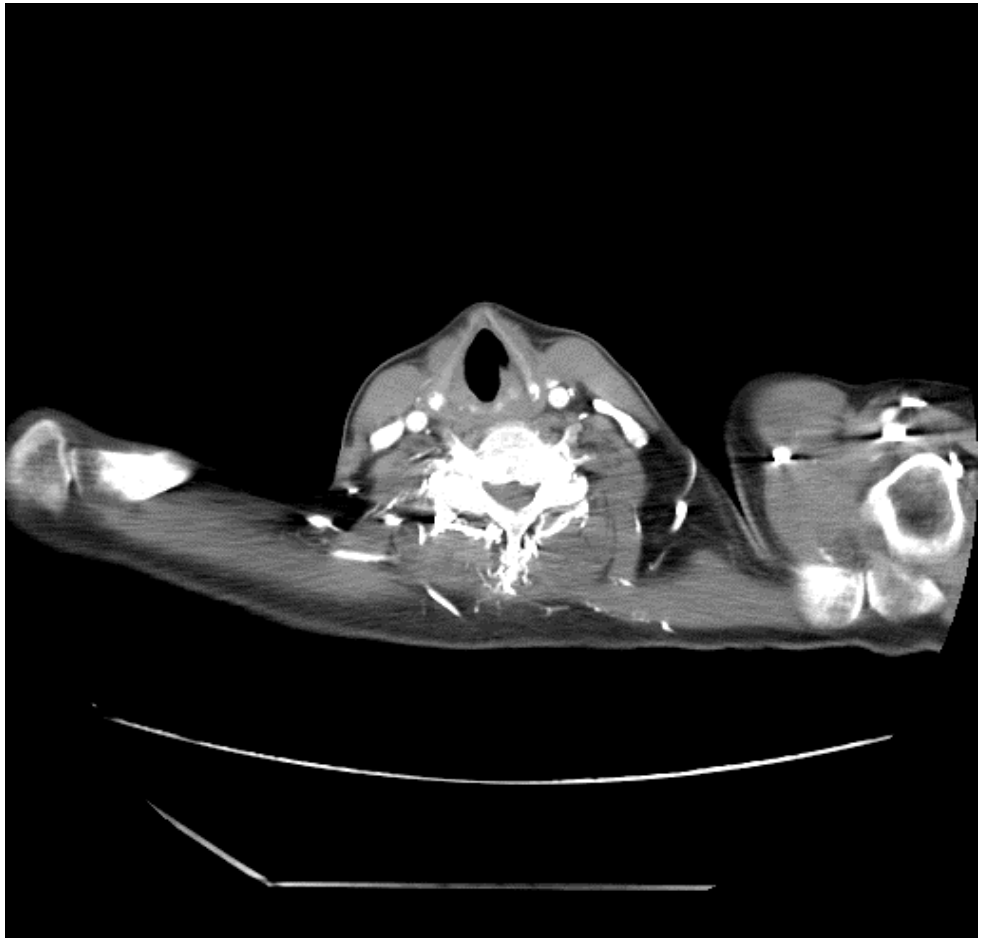

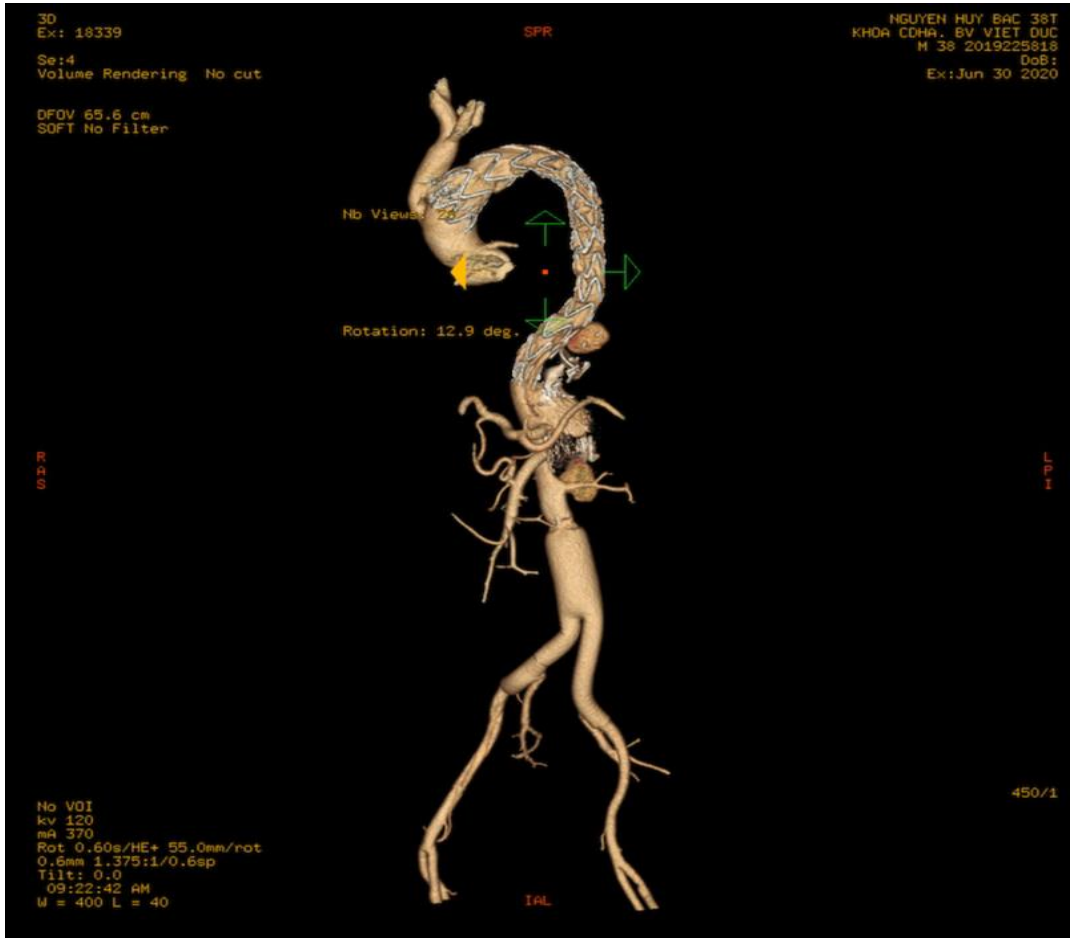

→ 3rd: Thay đoạn ĐMCB – chậu dưới thận sau 6 tháng

II. Kĩ thuật tạo dụng cụ Candy-Plug tự chế

*** Ưu điểm

- Phương pháp cải tiến bít lòng giả ở bệnh nhân lóc ĐMC type B mạn tính bằng dụng cụ tự chế tại bệnh viện Hữu nghị Việt Đức dễ thực hiện, an toàn, tiết kiệm chi phí và bước đầu cho kết quả tốt.

- Kỹ thuật này bít tắc hoàn toàn dòng trào ngược vào lòng giả gây huyết khối hoàn toàn lòng giả tránh nhưng biến chứng muộn như phình hay vỡ phình lòng giả ĐMC.

*** Nhược điểm

- Chưa có nhiều nghiên cứu với số lượng lớn và lâu dài nên cần các nghiên cứu để theo dõi sát là cần thiết

Thanks you for your attendtion!!!