Large common iliac arteries: bell Bottom, Sandwich, or hypogastric occlusion?

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✓ Nothing to Disclose

AIM

The current study aims at comparing the results of Sandwich, Hypogastric Artery Interruption and Bell-Bottom* techniques to address bilateral common iliac artery aneurysms during EVAR

**** CIAA > 16mm in diameter***

METHODS

✓ **From Jan 2000 to Dec 2016, 122 patients with asymptomatic AAA (mean Ø: 56 mm) associated with BCIAA (mean Ø: 32 mm) underwent elective EVAR at our Institution**

✓ **A total of 244 CIAA were treated using either the same technique bilaterally or a different technique in each side**

METHODS

	N° Patients	Period
Bilateral BBT	09	2000-2016
Bilateral CE	47	2000-2008
Bilateral ST	06	2008-2016
Unilateral ST + Contralateral CE	27	2008-2016
Unilateral ST + Contralateral BBT	13	2008-2016
Unilateral CE + Contralateral BBT	20	2000-2016

ST: Sandwich Technique; BBT: Bell-Bottom Technique; CE: Coil Embolization;

METHODS

	HAER by ST	HAI by CE	HAP by BBT
GROUP I	**52**		
GROUP II		**141**	
GROUP III			**51**

ST: Sandwich Technique; BBT: Bell-Bottom Technique; CE: Coil Embolization; HAP: Hypogastric Artery Preservation

HAER: Hypogastric Artery EndoRevascularization; HAI: Hypogastric Artery Interruption

RESULTS

	GROUP I	GROUP II	GROUP III	*p*
Median Follow-up (months)	**21**	**95**	**70**	***<.0001***
Technical Success Rate (%)	**100**	**100**	**100**	**NS**
Early Related Mortality Rate (%)	**0**	**0.7**	**0**	**NS**
Late Related Mortality Rate (%)	0	1.4	2	NS
Postoperative Aneurysm Rupture Rate (%)	0	0.7	2	NS
Reintervention Rate (%)	7.7	11	15.9	NS

RESULTS

Early Related Mortality

Bilateral HA Interruption by Coil Embolization

Normal flexible rectossigmoidoscopy

Fever and lower abdominal pain. CT scan – 24th post-operative day. HA thrombosis followed by rupture

RESULTS

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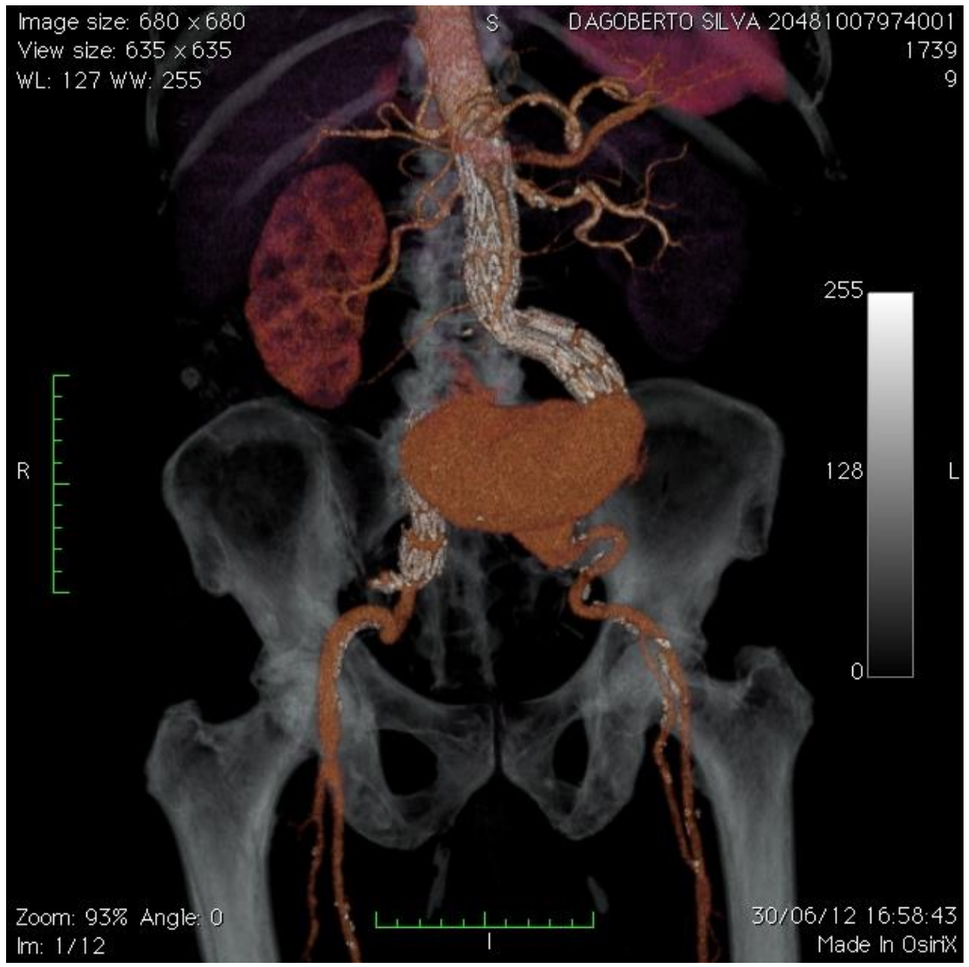
Reintervention Rate (%)	7.7	11	15.9	NS

RESULTS

Late Related Mortality & Postoperative Aneurysm Rupture

Bilateral HA Preservation by Bell-Bottom Technique (>22mm ø)



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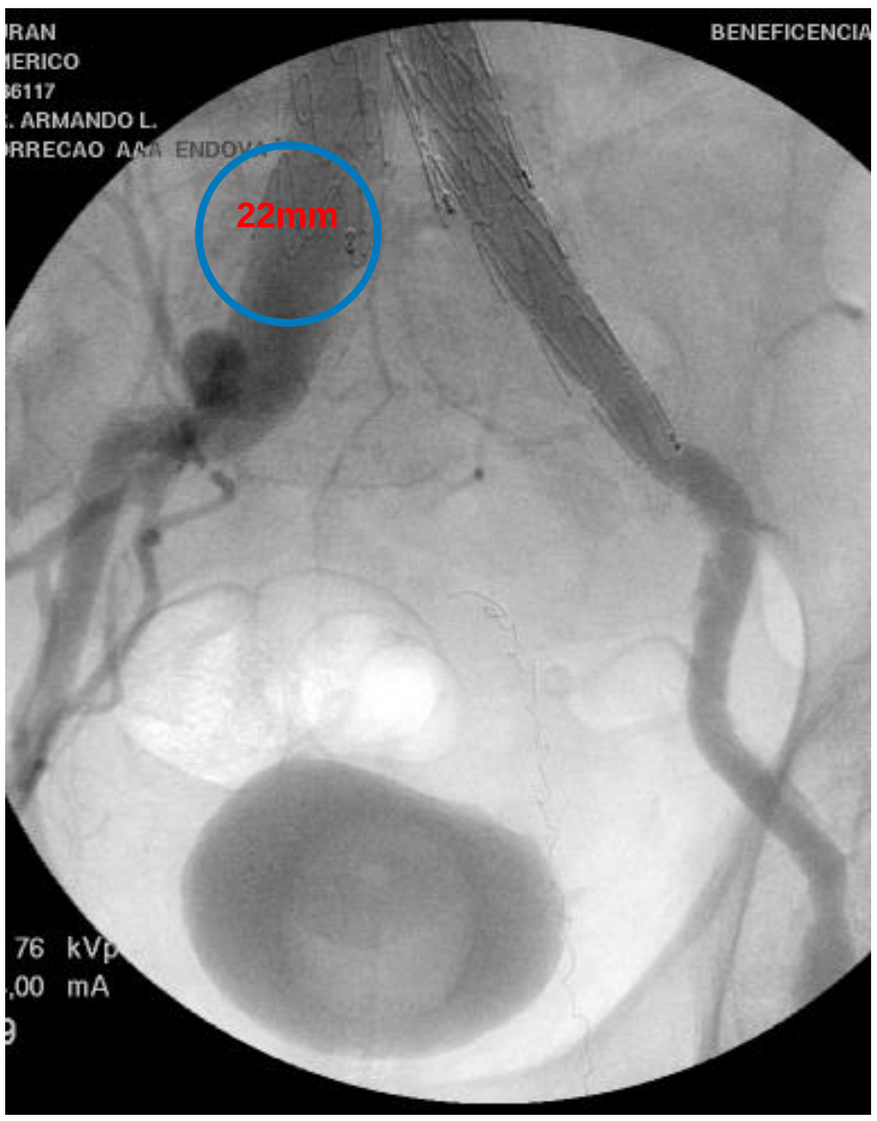
RESULTS

Reintervention

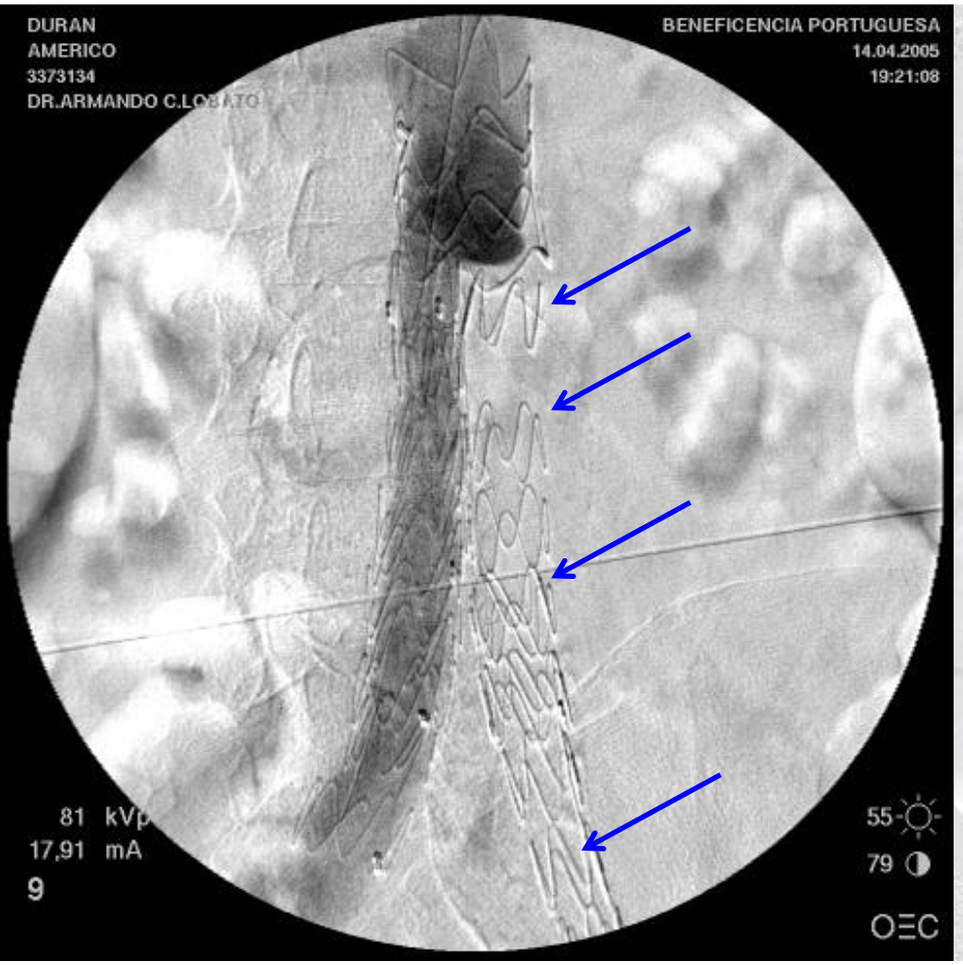
Unilateral HA Interruption by Coil Embolization + Contralateral HA Preservation by Bell-Bottom Technique (>22mm ø)



RESULTS

Reintervention

Unilateral HA Interruption by Coil Embolization + Contralateral HA Preservation by Bell-Bottom Technique (>22mm ø)



After 12 months
L iliac Limb Occlusion

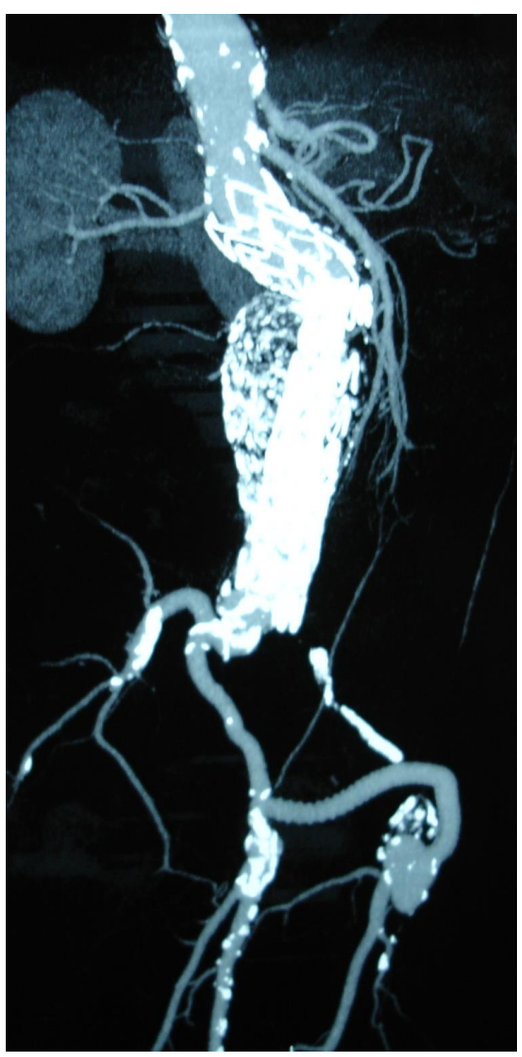
After 12 months
Type 1B Endoleak and

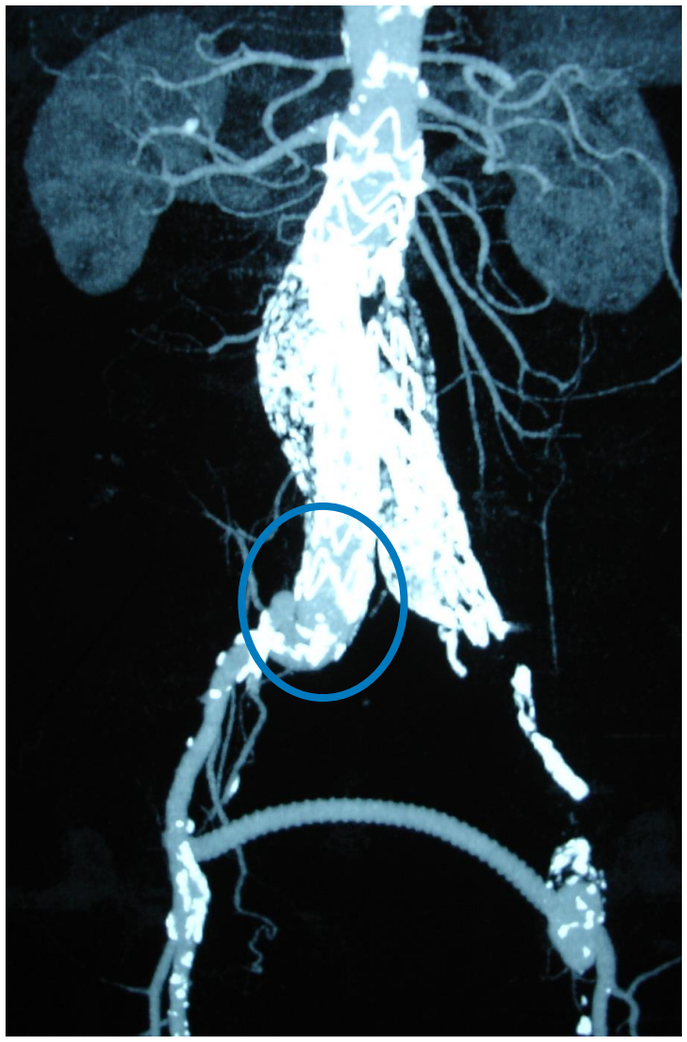
New BB & Fem-Fem bypass

RESULTS

Reintervention

Unilateral HA Interruption by Coil Embolization + Contralateral HA Preservation by Bell-Bottom Technique (>22mm ø)





CT After 24 months Stentgraft angulation & BB proximal migration, again

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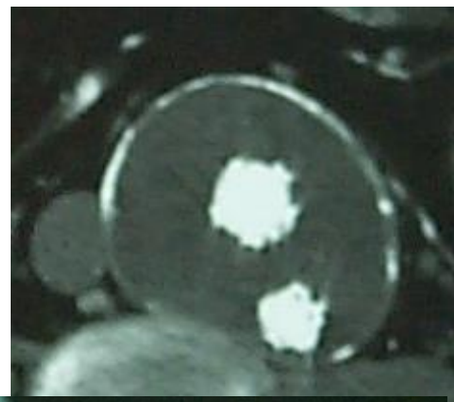
RESULTS

	GROUP I	GROUP II	GROUP III	*p*
Late Type III Endoleak Rate (%)	**1.9**	**4.3**	**2**	**NS**
Iliac Limb Occlusion Rate (%)	5.7	7.1	3.9	NS
Permanent Buttock Claudication Rate (%)	1.9	13.5	2	*P< .0006*
Late Type II Endoleak Rate (%)	1.9	17	2	*P< .0004*
Iliac Limb Migration Rate (%)	1,9	0	9.8	*P< .0001*
Late Type IB Endoleak Rate (%)	0	0	7.8	*P< .0001*

RESULTS

Late Type III Endoleak

Bilateral HA Interruption by Coil Embolization



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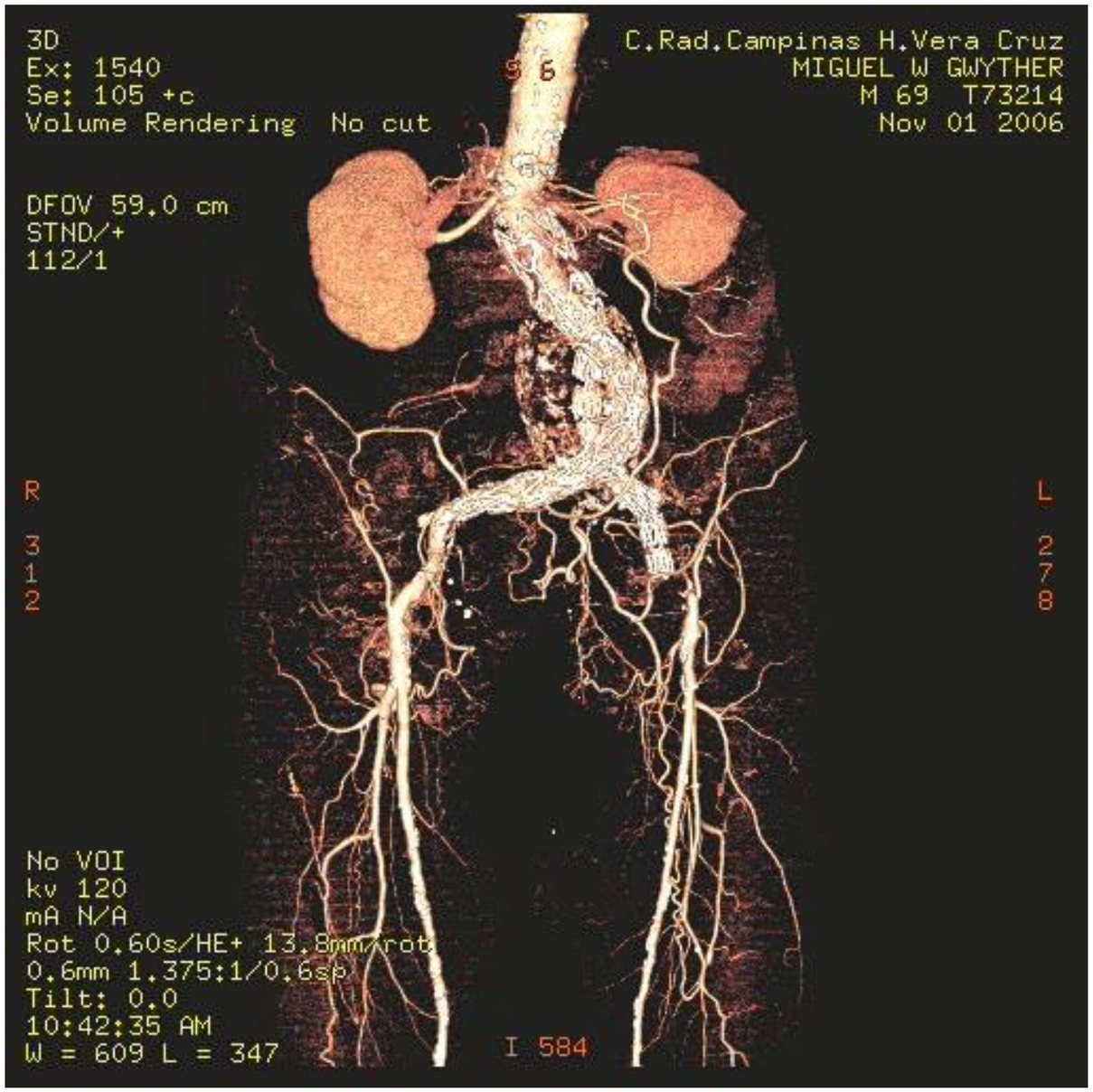
RESULTS

Iliac Limb Occlusion

Bilateral HA Interruption by Coil Embolization



RESULTS

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Late Type III Endoleak Rate (%)	**1.9**	**4.3**	**2**	**NS**
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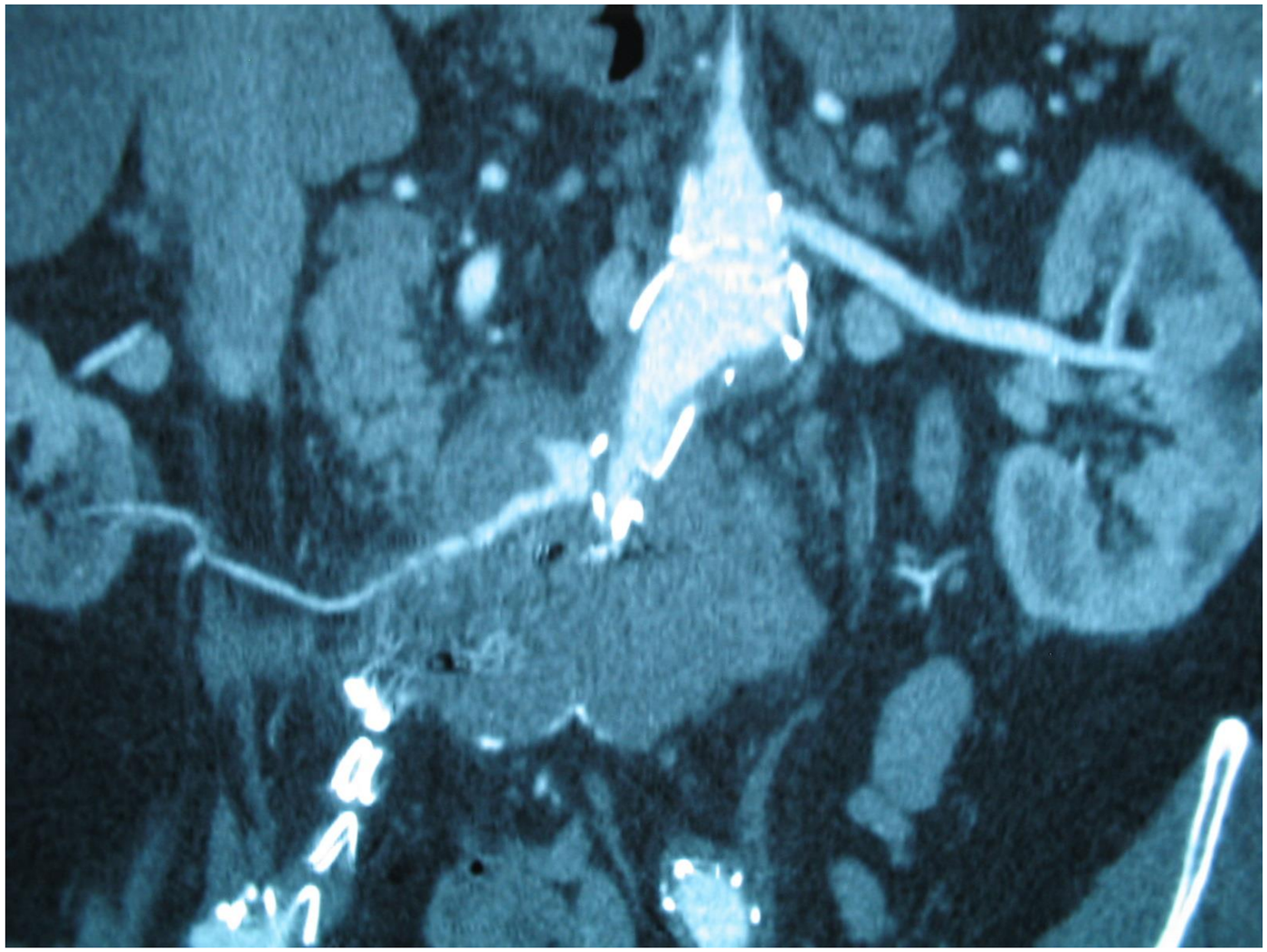
Permanent Buttock Claudication Rate (%)	**1.9**	**13.5**	**2**	***P< .0006***
Late Type II Endoleak Rate (%)	**1.9**	**17**	**2**	***P< .0004***
Iliac Limb Migration Rate (%)	1,9	0	9.8	***P< .0001***
Late Type IB Endoleak Rate (%)	0	0	7.8	***P< .0001***

RESULTS

Late Type II Endoleak

Bilateral HA Interruption by Coil Embolization



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RESULTS

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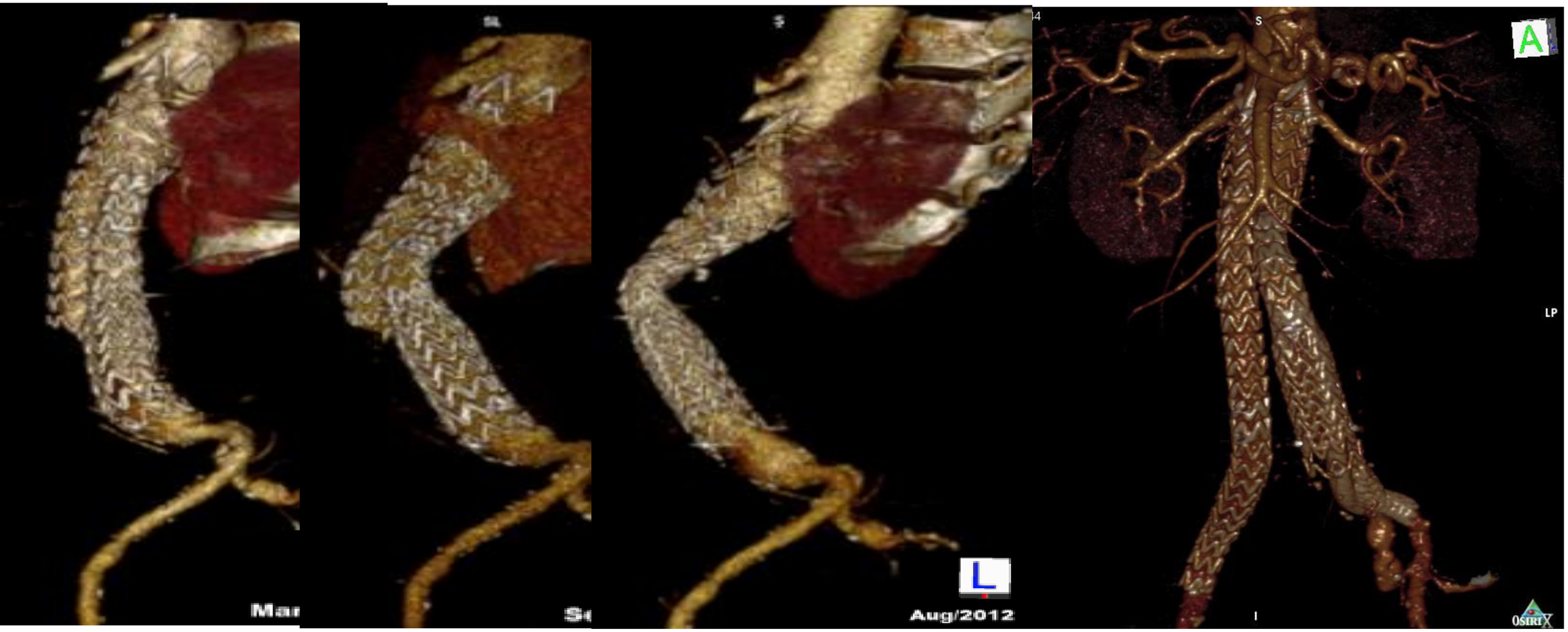
Permanent Buttock Claudication Rate (%)	1.9	13.5	2	***P< .0006***
Late Type II Endoleak Rate (%)	1.9	17	2	***P< .0004***
Iliac Limb Migration Rate (%)	**1,9**	**0**	**9.8**	***P< .0001***
Late Type IB Endoleak Rate (%)	**0**	**0**	**7.8**	***P< .0001***

RESULTS

Iliac Limb Migration

Unilateral HA Interruption by Coil Embolization + Contralateral HA Preservation by Bell-Bottom Technique (>22mm ø)



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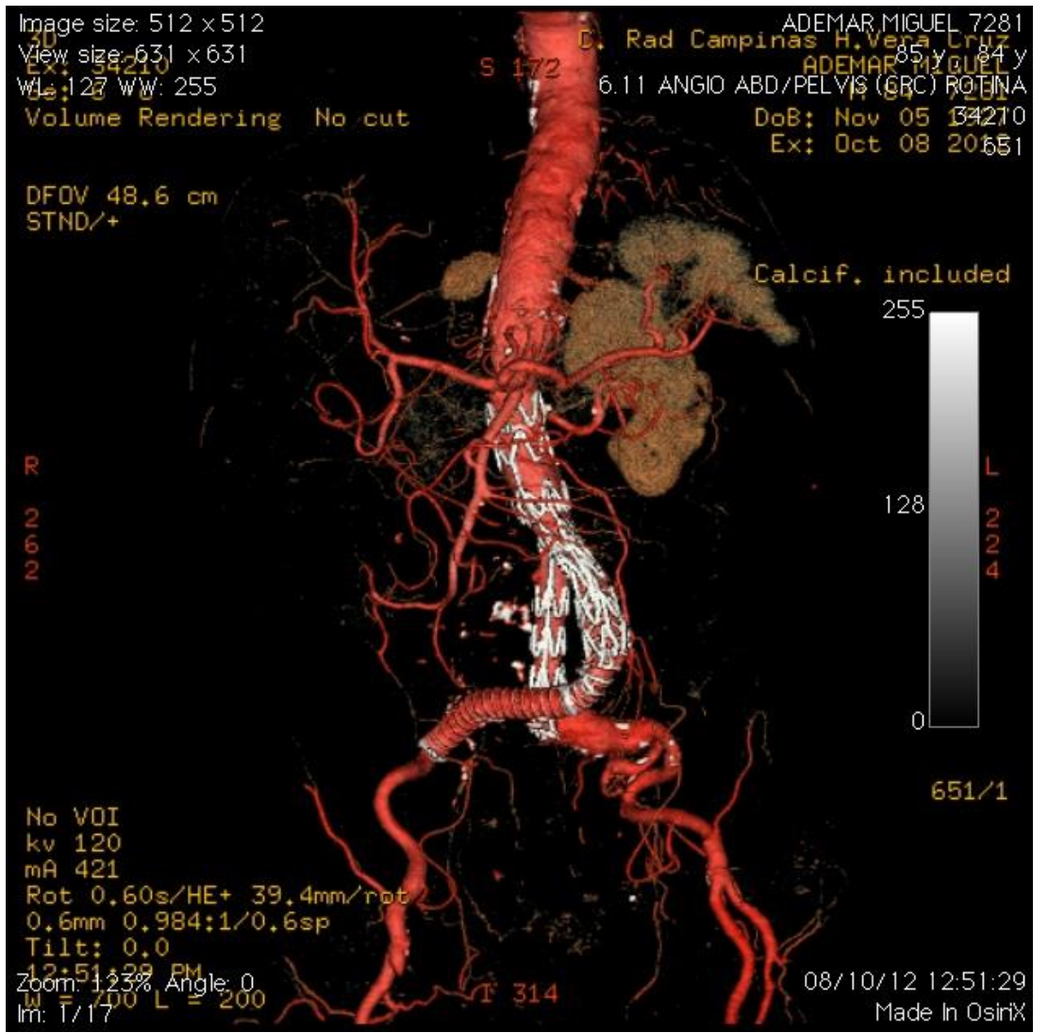
RESULTS

	GROUP I	GROUP II	GROUP III	*p*
Late Type III Endoleak Rate (%)	**1.9**	**4.3**	**2**	**NS**
Iliac Limb Occlusion Rate (%)	5.7	7.1	3.9	NS
Permanent Buttock Claudication Rate (%)	1.9	13.5	2	***P< .0006***
Late Type II Endoleak Rate (%)	1.9	17	2	***P< .0004***
Iliac Limb Migration Rate (%)	1,9	0	9.8	***P< .0001***
Late Type IB Endoleak Rate (%)	**0**	**0**	**7.8**	***P< .0001***

RESULTS

Late Type IB Endoleak

Bilateral HA Preservation by Bell-Bottom Technique(>22mm ø)



RESULTS

According to Multivariate Statistical Analysis (Cox regression model)

- ✓ **Bilateral HAI was associated with PBC (p=.03) and late type II endoleak (*p= 0.04*).**
- ✓ **BBT (ILE> 22mm in Ø) was associated with ILM (p=.01) and late type IB endoleak (*p= 0.01*)**

HAE: Hypogastric Artery Interruption; PBC: Permanent buttock claudication; BBT: Bell-Bottom Technique; ILE: iliac limb endograft; ILM; Iliac limb migration;

DISCUSSION

✓ The results of the present study are comparable to other reports, not necessarily performed in such unfavorable scenarios

✓ To our understanding, this is a consequence of ST hallmarks:

- Use of commercially readily available stent-grafts familiar to the majority of endovascular surgeons
- AIA or IIAA with CIA < 40mm in length
- CIA aneurysm (CIAA) lumen ≥ 8mm in diameter
- AIA or IIAA with very tortuous CIA anatomy
- Distal landing zone < 10mm in length in the main HA trunk
- Contralateral external iliac artery occlusion
- Long and large HAA
- Previous AAA open repair with Dacron graft (8 mm in diameter) complicated with CIA anastomotic false aneurysm

CONCLUSIONS

- **HAI and BBT are associated with greater complication rates in comparison to the ST for the treatment of AAA associated with BCIAA**
- **It is NOT *ideal to choose* bilateral HAI in patients with bilateral AIA**
- **It is NOT *ideal* to *choose* BBT with CIAA ≥ 20mm in diameter**
- **It is NOT *ideal* to *choose* ST in AIA with poor runoff (HA), HA with severe ostia stenosis and HA < 4mm in diameter**

CICE2018

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SAVE THE DATES
April, 18-21, 2018

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