

**LINC 2018**  
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# Contemporary stenting of the abdominal aorta for steno-occlusive disease: new technical developments

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# Conflict of interest

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- No disclosures

# History

- Palmaz-XL
  - Cumbersome
    - Not pre-mounted
    - Risk of loss of stent
  - Large profile
- Wallstent
  - Foreshortening
  - Jumping

# New developments

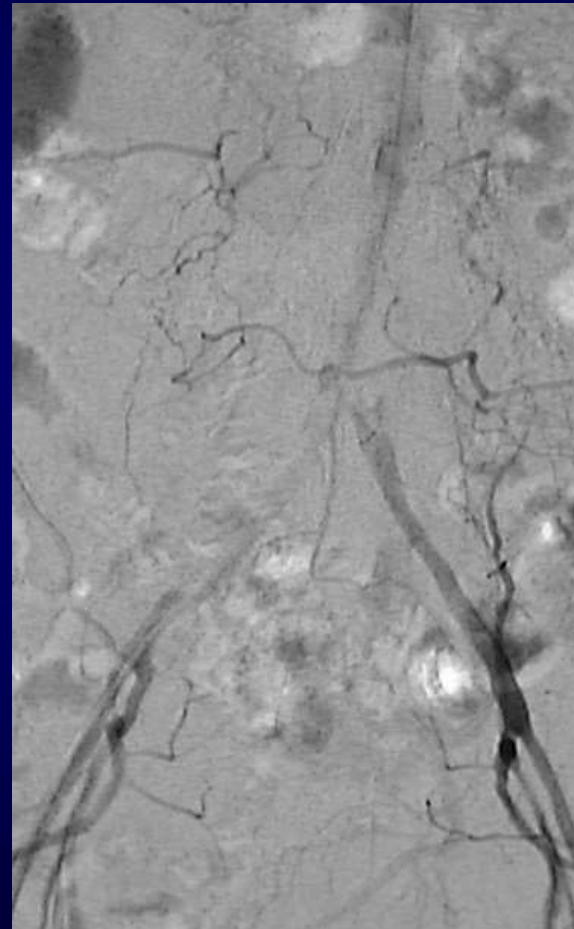
- Additional availability of various new designs
  - Co-Cr balloon-expandable
  - Co-Cr covered balloon-expandable
  - Self-expandable

# 'Old approach'

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- Displacing bifurcation cranially
  - Parallel stents
- 
- Nowadays 'bifurcation reconstruction'

# 'Old approach'



# 'Old approach'



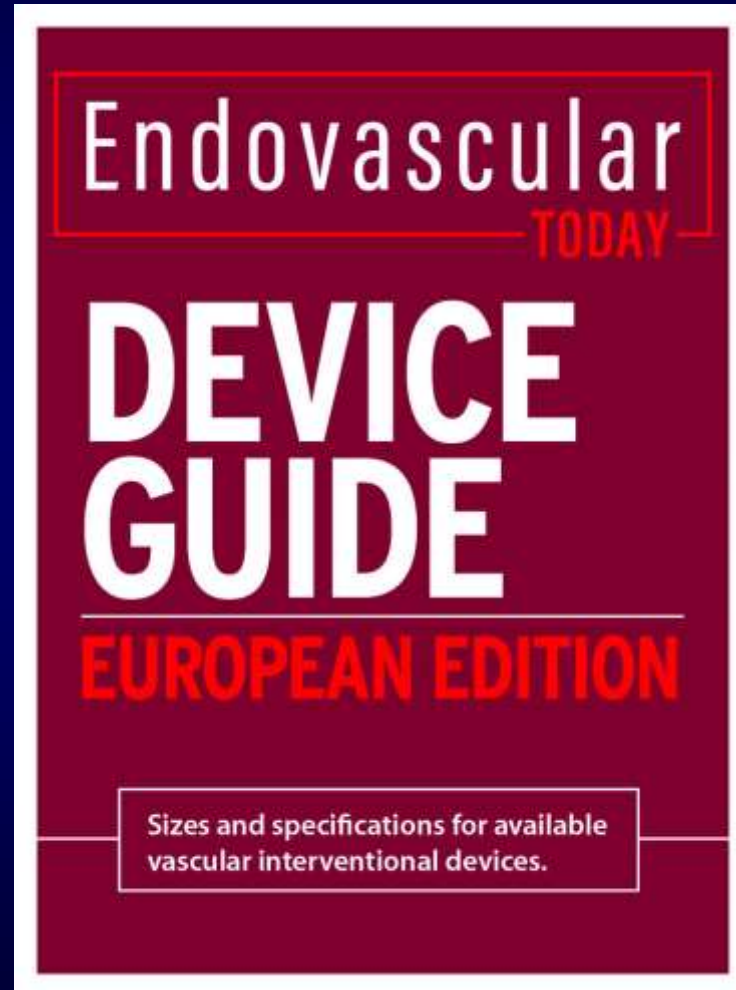


# 'Old approach'





# New developments



# Currently available technologies

## EUROPE DEVICE GUIDE > BALLOON-EXPANDABLE COVERED STENTS

Company Name	Product Name	Material Used	Maximum Guidewire Size	Introducer Size (F)	Stent Diameter	Stent Length	Delivery System					
							steel					
BD Interventional	Lib	ang International GmbH	Facile Inert Peripheral Stent Implantator System	Carbon-ten inert catheter	0.035	6 (5-6-mm diameter), 7 (7.5-mm diameter), 8 (8.5-mm diameter)	5, 6, 7, 8, 9, 10, 12, 18, 28, 36, 48, 58, 75, 115, 150					
Bentley	Bel			Medtronic	IntraStent LD Max (Unmounted) Stent System	316 L stainless steel	11, 12, 16, 26, 36					
Bentley	Bel	ang International GmbH	Thalis Flex Peripheral Stent Implantator System	Medtronic	IntraStent LD Mega (Unmounted) Stent System	316 L stainless steel	9, 16, 26, 36					
		Andamed GmbH	AndraStent	Medtronic								
Geisga	Ad OT Co			B. Braun Melungen AG	VascuFlex Aortic	Nitinol	12, 14, 16, 0.035, 14, 18, 18, 20, 22, 24, 28, 32, 36, 40, 70, 100, 130, 150, 100					
		Andamed GmbH	AndraStent	Medtronic								
		Andamed GmbH	AndraStent	Medtronic	B. Braun Melungen AG	VascuFlex (Low Rad)	Cook Medical	Zilver Vena Venous Self-Expanding Stent	Nitinol	7, 0.035, 14, 16, 60, 100, 140, 80, 120		
		Andamed GmbH	AndraStent	Medtronic	B. Braun Melungen AG	VascuFlex (Low Rad)	Cordis, a Cardinal Health company	Precise Pro RX	Nitinol	5 (5-8-mm sinus-Repo-Visual 5F), 0.014, 5-10, 20, 30, 40, 136		
		AndraTec GmbH Germany	Optinus	Medtronic	B. Braun Melungen AG	VascuFlex (Low Rad)	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-418	Nitinol	4, 0.016, 3-8, 30, 40, 60, 80, 100, 130, 150, 180, 200		
		AndraTec GmbH Germany	Optinus CV Covered Stent	Merit Life Sciences Pvt. Ltd.	B. Braun Melungen AG	VascuFlex	Cordis, a Cardinal Health company	SMART Core	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-518	Nitinol	5, 0.018, 6-10, 40, 80, 80, 180
		Balton	Netis		Balton	Jaguar	Cordis, a Cardinal Health company	SMART Flex	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-535	Nitinol	5, 0.035, 4-10, 30, 40, 60, 80, 75, 120
		Balton	Netis C		Balton	Jaguar	Cordis, a Cardinal Health company	SMART Flex	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-635	Nitinol	6, 0.035, 6-10, 12, 30, 40, 60, 80, 100, 120, 150
		Balton	Netlus	Merit Life Sciences Pvt. Ltd.	BD Interventional	E-Luminex Stent	eucotech AG	Resistant	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-DS	Nitinol	4, 0.018, 4-9, 12, 15, 18, 20, 22, 24, 85
		Balton	Netlus	Merit Life Sciences Pvt. Ltd.	BD Interventional	E-Luminex Vascular Stent	eucotech AG	Resistant Camouflage	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-DS	Nitinol	4, 0.018, 4-9, 12, 15, 18, 20, 22, 24, 85
				QualiMed Innovative Medizinprodukte GmbH			Gore & Associates	Gore Tights Vascular Stent	optimed Medizinische Instrumente GmbH	sinus-SuperFlex-DS	Nitinol	4, 0.018, 4-9, 12, 15, 18, 20, 22, 24, 85
				QualiMed			Vascular	Evolution	optimed Medizinische Instrumente GmbH	sinus-Venous	Nitinol	10, 0.035, 10, 12, 14, 16, 18, 60, 80, 100, 120, 150, 100
					BD Interventional	LifeStent S Vascular Stent	Jotec GmbH	E-11 Aortic Stent	optimed Medizinische Instrumente GmbH	sinus-XL	Nitinol	10, 0.035, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 30, 40, 50, 60, 80, 100, 100
							Medtronic	Abre Venous Expanding Stent System	optimed Medizinische Instrumente GmbH	sinus-XL 8F	Nitinol	6, 0.035, 14, 16, 30, 40, 50, 60, 80, 100, 100
							Medtronic	Complete SE	optimed Medizinische Instrumente GmbH	sinus-XL Flex	Nitinol	10, 0.035, 14, 16, 18, 20, 22, 24, 40, 50, 60, 80, 100, 120, 150, 100

# Balloon-expandable covered stents

- Advantages
  - Potentially better patency
  - Reduces risk of distal embolization
- Disadvantages
  - Foreshortening
  - Placement close to bifurcation problematic (shoulder of balloon may rupture CIA)
  - Loss of collaterals (lumbar arteries/IMA)

# Balloon-expandable covered stents

- Foreshortening

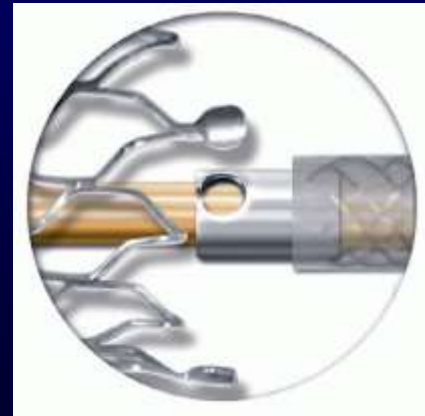
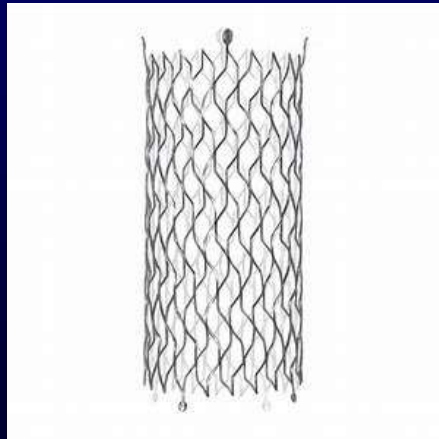


# Self-expandable stents

- Advantages
  - No fore-shortening
  - No forward jumping
  - Some repositionable
  - Continuous outward force
  - 6F compatible devices (sizes sufficient for steno-occlusive disease)
- Disadvantages
  - Post-dilation close to bifurcation still problematic, but feasible with kissing balloons or very short shouldered balloons

# Self-expandable stents

- 10 F
  - Sinus XL stent (16-36)
  - Sinus XL Flex (14-24 mm)
- 6F
  - Sinus XL 6F (14-16 mm)
  - Sinus-Repo Visual 6F (6-14 mm)



# Case #1

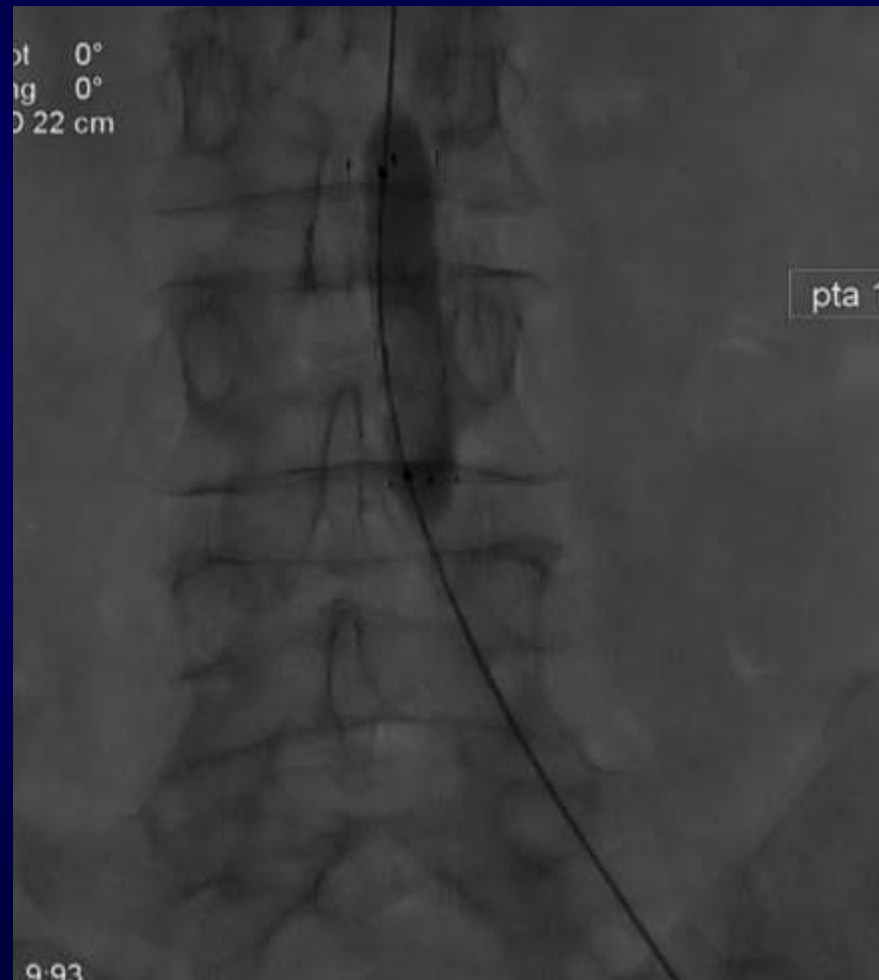




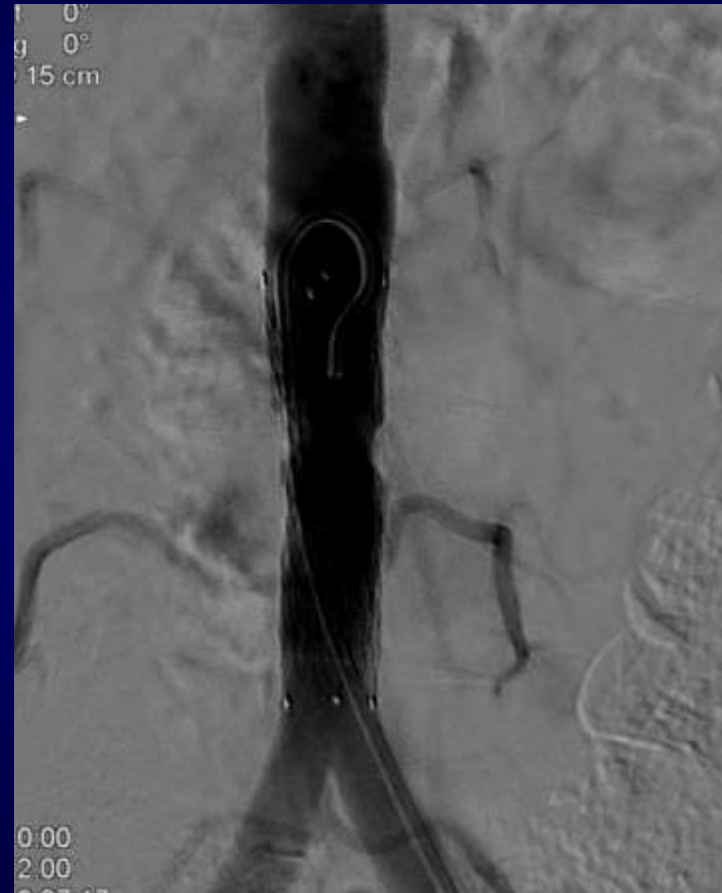
# Case #1



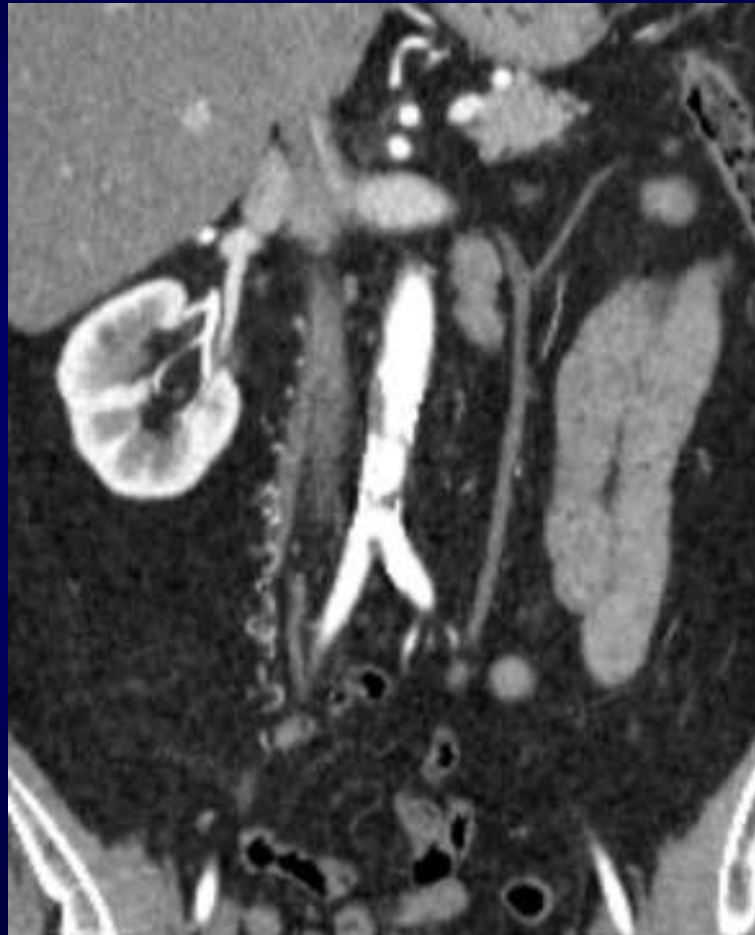
# Case #1



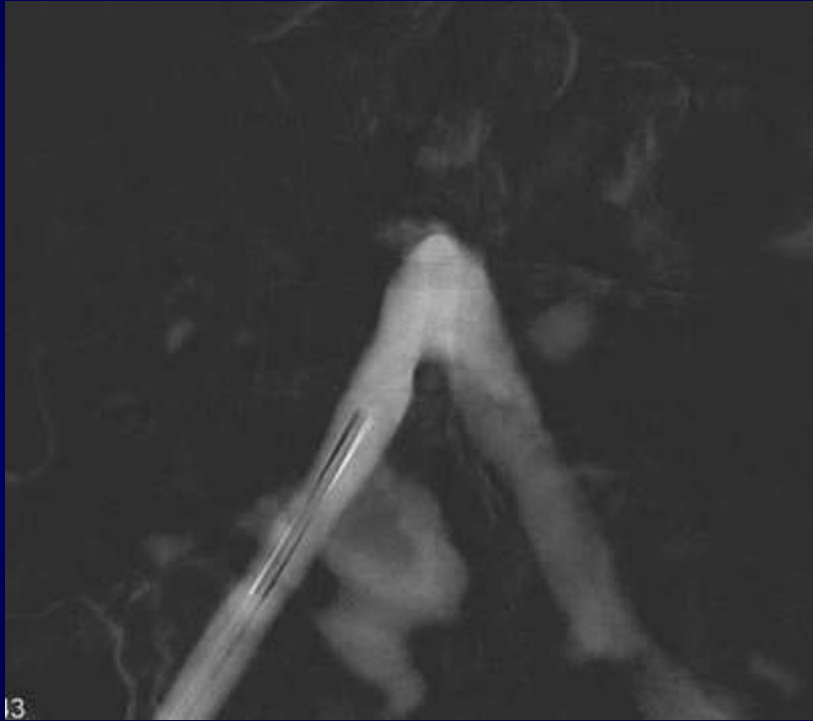
# Case #1



# Case #2



# Case #2



# Case #2



# Case #2

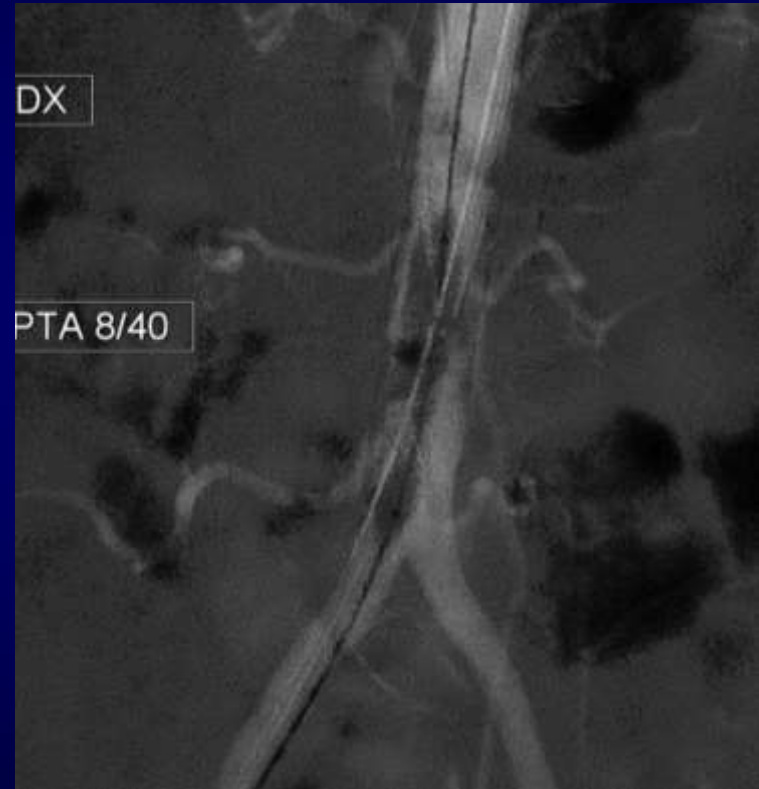




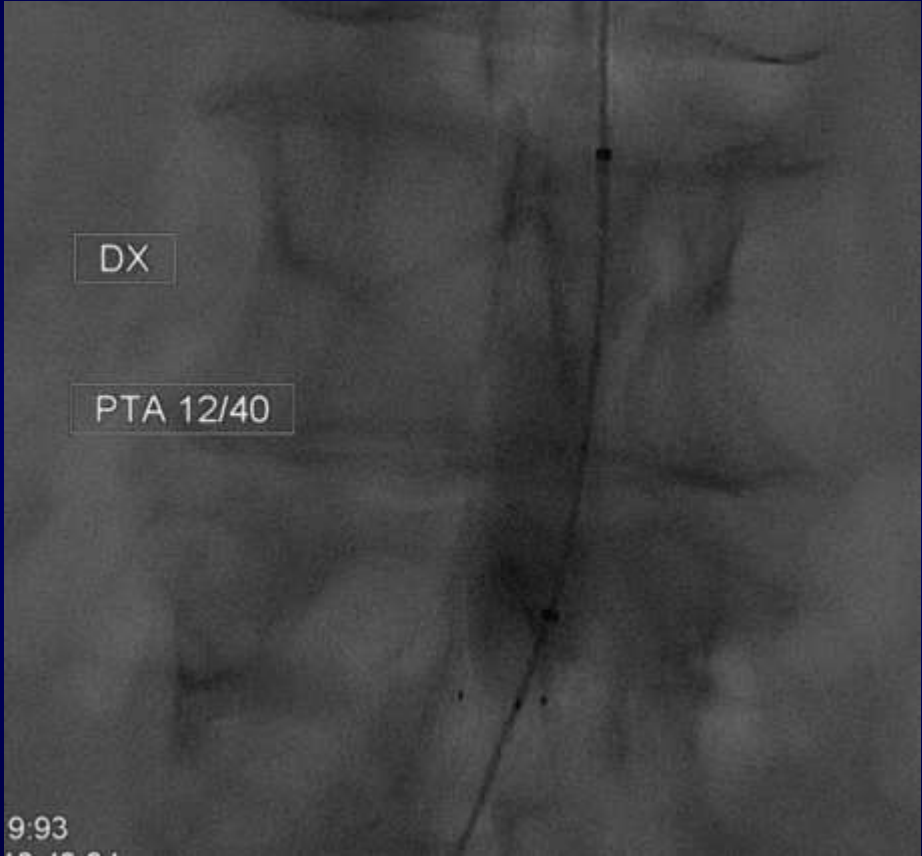
# Case #3



# Case #3



# Case #3



# Case #3



# Conclusions

- Aortic stenting with low-profile self-expandable stents is feasible and safe
- Aortic stenting with low-profile self-expandable stents does not compromise collaterals and allows stenting close to the aortic bifurcation

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