

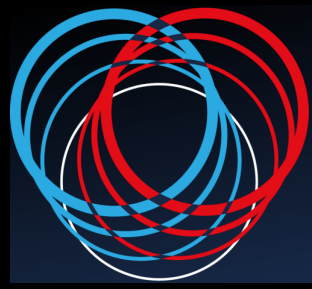
ciw

WORLD

CHALLENGES & INNOVATIONS IN VASCULAR WORLD

31 MARS **2026**
1^{ER} AVRIL

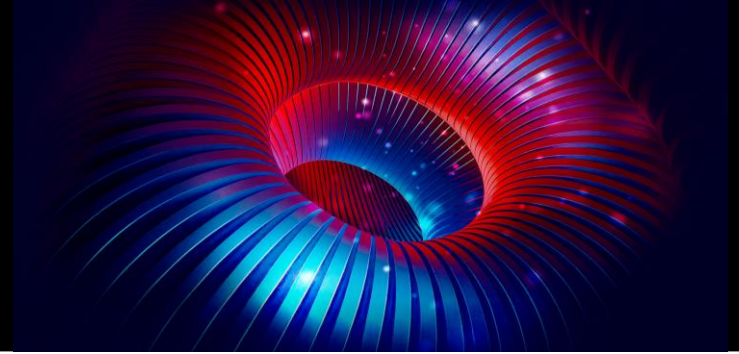
MÉRIDIDIEN ÉTOILE
PARIS



CIV
WORLD
CHALLENGES & INNOVATIONS IN VASCULAR WORLD

31 MARS
1^{ER} AVRIL **2026**

MÉRIDIEN ÉTOILE
PARIS



Ma technique simple et rapide pour le cathétérisme du moignon controlatéral

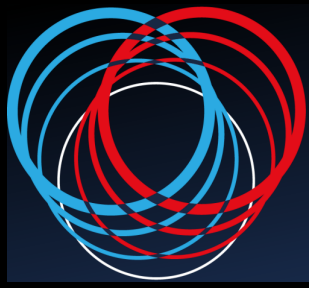
MD LOUIS Nicolas

Vascular Surgeon

Hôpital Privé Les Franciscaines

Nîmes

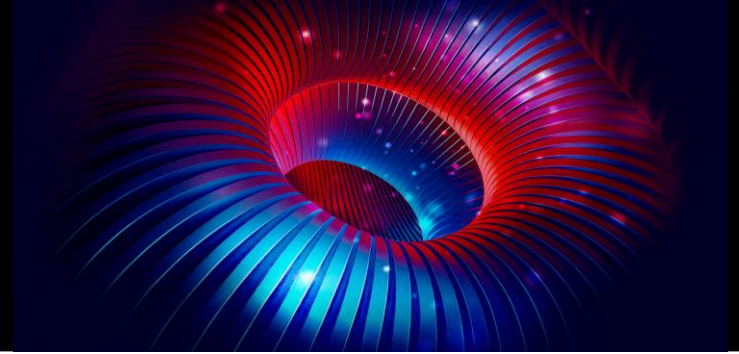




CIV
WORLD
CHALLENGES & INNOVATIONS IN VASCULAR WORLD

31 MARS
1^{ER} AVRIL **2026**

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PARIS



*My simple and fast technique
for catheterizing the
contralateral branch*

MD LOUIS Nicolas

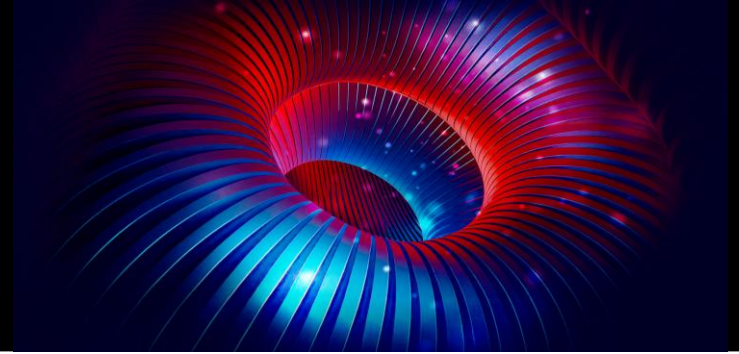
Vascular Surgeon

Hôpital Privé Les Franciscaines

Nîmes



Conflits et liens d'intérêts



- Je n'ai aucun conflit d'intérêt potentiel à déclarer
- J'ai, ou j'ai eu au cours des deux dernières années, une affiliation, des intérêts financiers ou des liens d'intérêts de tout ordre avec les firmes suivantes, ou j'ai reçu des compensations financières ou des honoraires, des bourses de subvention ou de recherche émanant des companies suivantes :
 - **Asahi Intecc, Medtronic, GE HealthCare, I-Vascular, Boston Scientific, Biotronic**

How manage the time procedure and the radiation ?

1/ Time Procedure: Deployment the EVAR is now day standardize
BUT THE CANULATION OF THE CONTROLATERAL GATE COULD BE AN ISSUE.

2/ Radiation: *Parameters of the hybrid room, **DECREASE THE CONTRALATERAL TIME FOR CANULATION**, and avoid lateral C Arm angulation.*

Radiation and Reference Levels?

Aorta and Major Branches

Eur J Vasc Endovasc Surg (2020) 60, 837–842

NATIONAL SURVEY

National Diagnostic Reference Levels for Endovascular Aneurysm Repair and Optimisation Strategies

Objective: The International Commission on Radiological Protection (ICRP) has highlighted the large number of medical specialties using fluoroscopy outside imaging departments without programmes of radiation protection (RP) for patients and staff. Vascular surgery is one of these specialties and endovascular aneurysm repair (EVAR) is one of the most challenging procedures requiring RP guidance and optimisation actions. The recent European Directive on Basic Safety Standards requires the use and regular update of diagnostic reference levels (DRL) for interventional procedures. The objective of the study was to know the doses of patients undergoing EVAR with mobile Xray systems and with hybrid rooms (fixed Xray systems), to obtain national DRLs and suggest optimisation actions.

Methods: The Spanish Chapter of Endovascular Surgery launched a national survey that involved hospitals for 10 autonomous communities representing the 77% of the Spanish population (46.7 million inhabitants). Patient dose values from mobile Xray systems were available from nine hospitals (sample of 165 EVAR procedures) and data from hybrid rooms, from seven hospitals, with dosimetric data from 123 procedures. The initial national DRLs have been obtained, as the third quartile of the median values from the different centres involved in the survey.

Results: The proposed national DRLs are 278 Gy cm² for hybrid rooms and 87 Gy cm² for mobile Xray systems, and for cumulative air kerma (cumulative AK) at the patient entrance reference point, 1403 mGy for hybrid rooms, and 292 mGy for mobile systems.

Conclusion: An audit of patient doses for EVAR procedures to identify optimised imaging protocol strategies is needed. It is also appropriate to evaluate the diagnostic information required for EVAR procedures. The increase by a factor of 3.2 (for kerma area product) and 4.8 (for cumulative AK) in the DRLs needs to be justified when the procedures are performed in the hybrid rooms rather than with mobile Xray systems.

Kerma X 3.2 in Hybrid Room VS C-ARM



WHAT THIS PAPER ADDS

The study identifies optimisation strategies the imaging protocols for endovascular aneurysm repair procedures.

Radiation and Reference Levels?

Multicenter Study Eur Radiol. 2017 Nov;27(11):4846-4856.
doi: 10.1007/s00330-017-4791-2. Epub 2017 May 18.

Investigation of reference levels and radiation dose associated with abdominal EVAR (endovascular aneurysm repair) procedures across several European Centres

E Tuthill¹, L O'Hora², M O'Donohoe², S Panci³, P Gilligan⁴, D Campion⁵, R Trenti⁶, E Fox⁴, D Catania⁷, L Rainford⁸

Affiliations
PMID: 28523354 DOI: 10.1007/s00330-017-4791-2

Abstract

Objectives: Endovascular aneurysm repair (EVAR) is considered the treatment of choice for abdominal aortic aneurysms with suitable anatomy. In order to improve radiation safety, European Directive (2013/59) requires member states to implement diagnostic reference levels (DRLs) in radio-diagnostic and interventional procedures. This study aimed to determine local DRLs for EVAR across five European centres and identify an interim European DRL, which currently remains unestablished.

Methods: Retrospective data was collected for 180 standard EVARs performed between January 2014 and July 2015 from five specialist centres in Ireland (n=2) and Italy (n=3). Data capture included: air kerma-area product (P_{KA}), total air kerma at the reference point ($K_{a,r}$), fluoroscopic time (FT), number of acquisitions, frame rate of acquisition, type of acquisition, patient height, weight, and gender.

Results: The mean values for each site A, B, C, D, and E were: P_{KA} s of $4343 \pm 994 \mu\text{Gym}^2$, $18,200 \pm 2141 \mu\text{Gym}^2$, $11,423 \pm 1390 \mu\text{Gym}^2$, $7796 \pm 704 \mu\text{Gym}^2$, $31,897 \pm 5798 \mu\text{Gym}^2$; FTs of 816 ± 92 s, 950 ± 150 s, 708 ± 70 s, 972 ± 61 s, 827 ± 118 s; and number of acquisitions of 6.72 ± 0.56 , 10.38 ± 1.54 , 4.74 ± 0.19 , 5.64 ± 0.36 , 7.28 ± 0.65 , respectively. The overall pooled 75th percentile P_{KA} was $15,849 \mu\text{Gym}^2$.

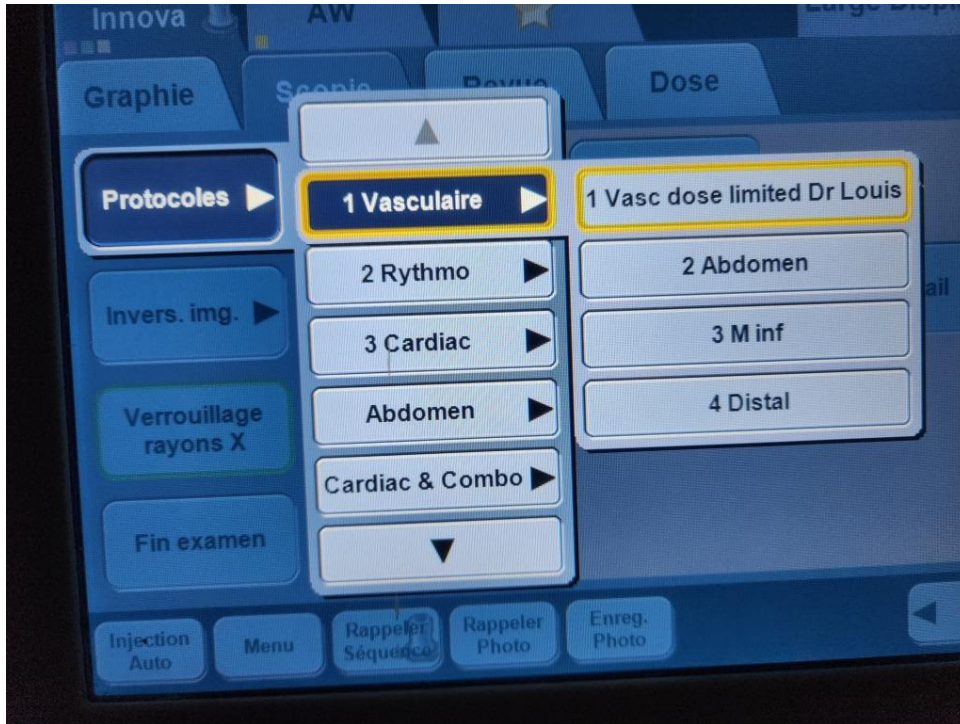
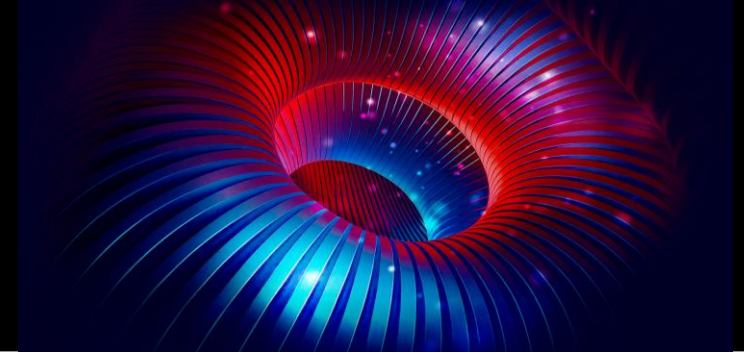
Conclusion: Local reference levels were identified. The pooled data has been used to establish an interim European DRL for EVAR procedures.

75th percentile $P(Ka)$: 15.849 μGym^2

Conclusion:
Interim European DRL for EVAR procedures



Radiation



New parameters (application engineer) on the dose curves.

New parameters on the radiation dose level.

IGS :	IG5530
N° SYSTÈME :	M365531901
PLATFORM :	Solaris

GE Healthcare **clinique des Franciscaines**
Nîmes

DATE DE CREATION	
Date :	22/07/2019
Par :	Nolwenn

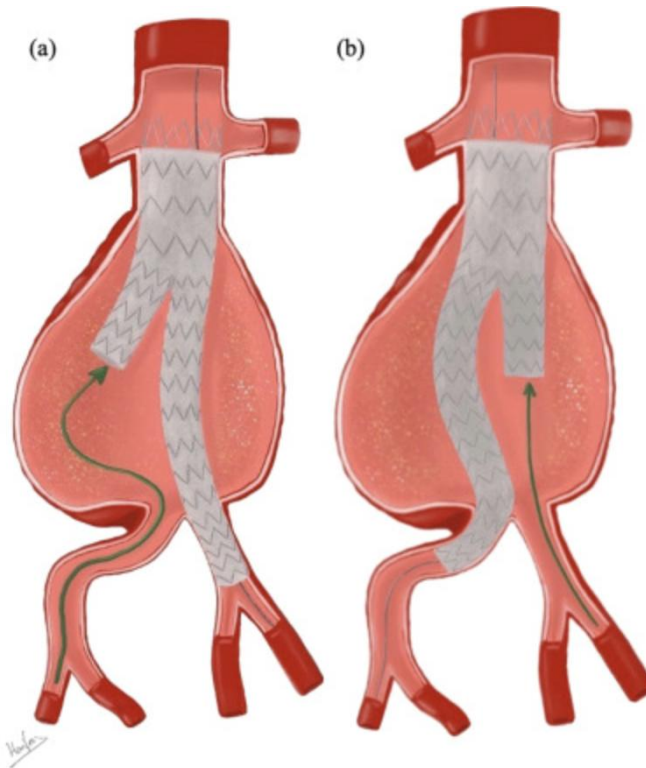
*Sharpness/Background Contrast/Background Brightness/Object Contrast/Temporal Denoising/Spatial Denoising

Date de dernière modification	N° XML Pro	Protocol Category Name	Protocol Name	GRAPHE				SCOPE			
				Dose strategy	Frame Rate	Detail	Customer Sensibility*	Dose strategy	Frame Rate	Detail	Customer Sensibility*
22/07/2019	63	1 Vasculaire	1 Vasc dose Limited Dr Louis	RDL+	2i/s	Bas		IQS	3,75i/s	Bas	
	8		2 Abdomen	IQS	4i/s	Bas		IQS	7,5i/s	Bas	
	9		3 M inf	IQS	2i/s	Bas		IQS	7,5i/s	Bas	
	21		4 Distal	IQS	1i/s	Bas		IQS	7,5i/s	Bas	
22/07/2019	45	3 Cardiac	1 Cardio Low Dose	RDL+	15i/s	Bas		IQS	7,5i/s	Bas	
22/07/2019	46		2 Cardio	IQ+	15i/s	Bas		IQ+	7,5i/s	Normal	

Anatomy-Based Strategies to cannulate the gate



Large AAA With Little Thrombus

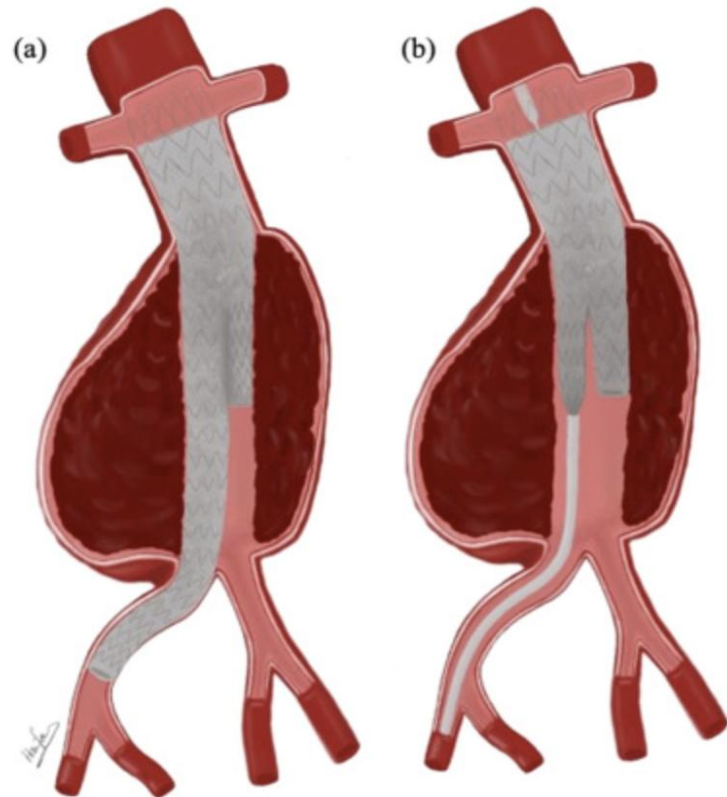


Difficult to anticipate the best side to introduce the device

Anatomy-Based Strategies to cannulate the gate



Narrow aortic lumen with large thrombus



Contralateral limb could be **crush**

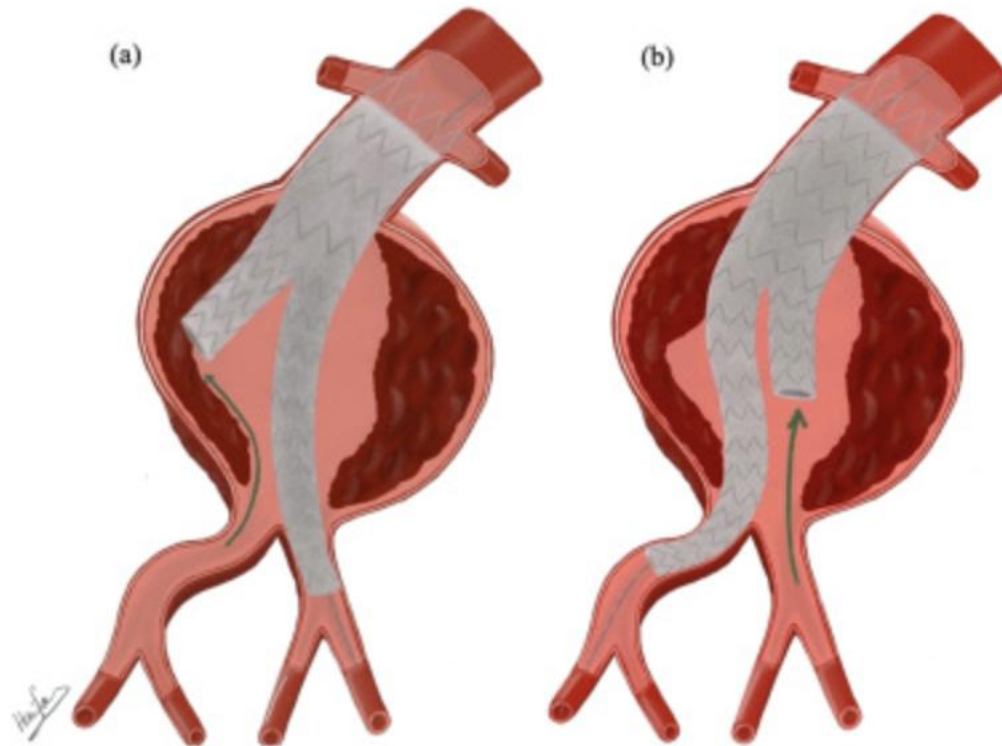
Tip and trick:

Don't deploy totally the ipsilateral limb

Anatomy-Based Strategies to cannulate the gate



The Angulated Neck

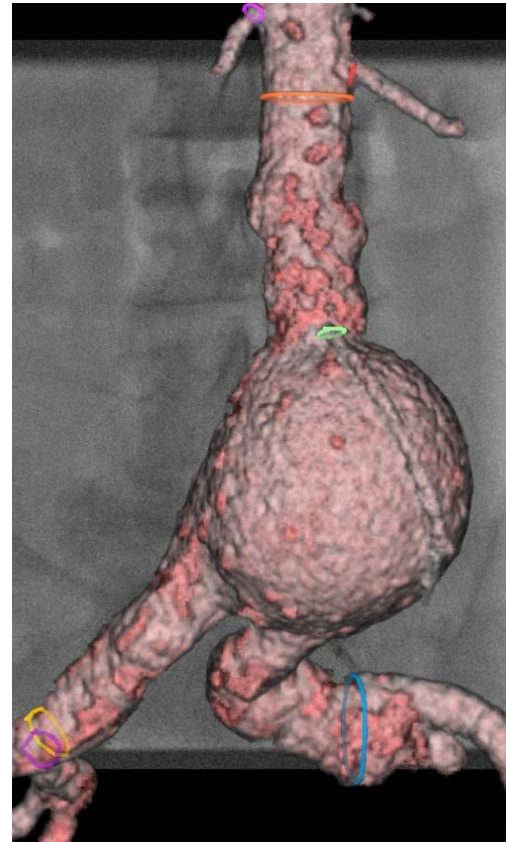
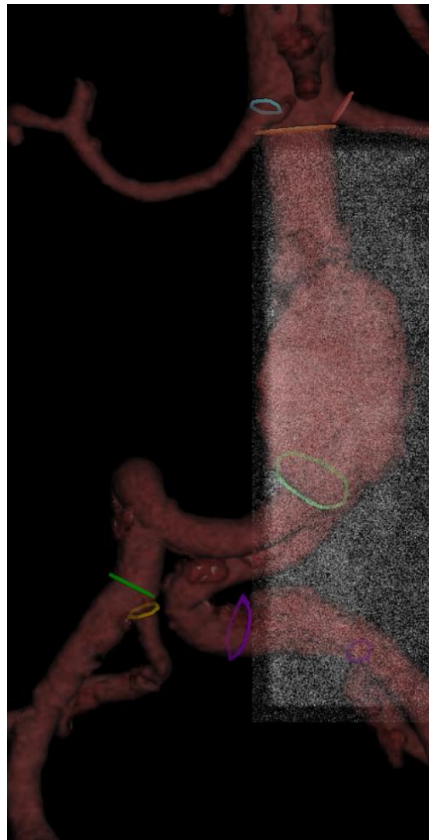


Difficult to anticipate the best side to introduce the device

Anatomy-Based Strategies to cannulate the gate



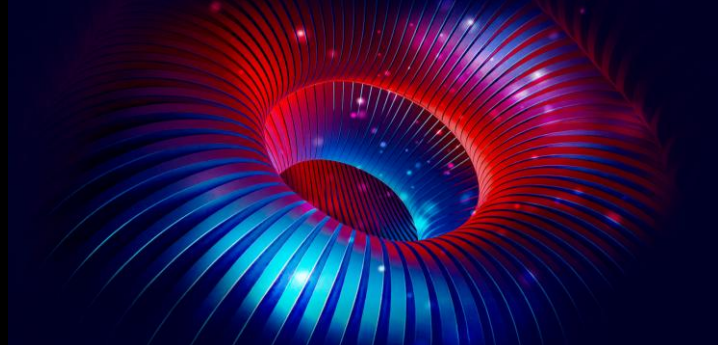
Tortuous Iliac Arteries



Difficult to anticipate the best side to introduce the device

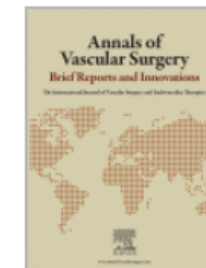
Tips:

Selection of Catheters ...








Annals of Vascular Surgery - Brief Reports and Innovations

Volume 2, Issue 2, June 2022, 100088



Anatomy-based strategies for contralateral gate cannulation during EVAR ☆

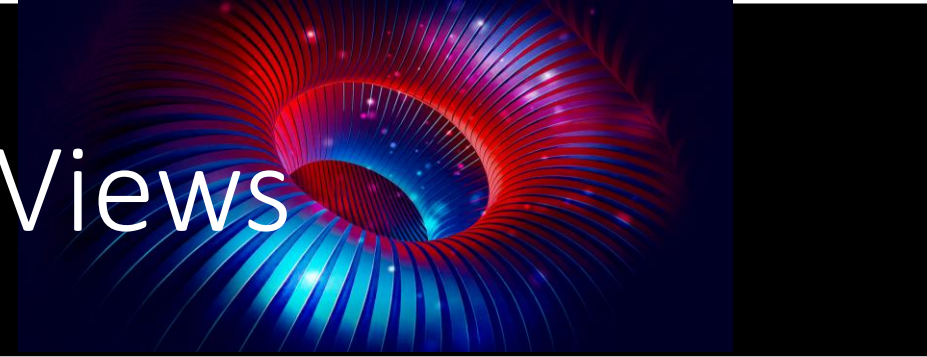
Samer Koussayer^a  , Aseel Abuduruk^b  , Amjad Alkhezzi^c , Bilal Koussayer^d

Selection of Catheters



- It is crucial to choose the right catheter depending on the anatomy of the aneurysm and the orientation of CLG. Change the catheter once the cannulation become difficult is better than spending long time trying with same catheter. Options include **Vertebral, KMP** (Cordis Corporation, Miami, Florida, USA), **Multi-purpose, Rim** (Cordis Corporation, Miami, Florida), **Judkins Right** (Terumo, Tokyo, Japan), **Cobra C1** (Cordis Corporation, Miami, Florida, USA) & **C2, BER II, III** (Terumo, Tokyo, Japan), **Amplatz Left I/II** (double curve) (Cordis Corporation, Fremont, California, USA), and **Amplatz Right** (Cordis Corporation, Fremont, California, USA). Use of an angulated tip hydrophilic wire in combination with the above catheters is advisable to facilitate the cannulation. Sometimes we use long sheath with a pig-tail catheter. The tip of the catheter can be changed to different angulation depend on how much we pull it inside the long sheath.
- The other option is to use the **Destino steerable sheath** (Oscor Incorporated, Palm Harbor, Florida, US). It has a steerable tip angle that could be changed to different degrees of angulations on **guiding catheter JR4, IM** (Medtronic)
- Interest **Tourguide** (Medtronic)

Multiple C-Arm Views



The visual orientation is very important during an endovascular intervention.

Changing the C-arm views can reveal the true location of the gate.

A single image may give a false impression of the right location of the CLG.

We recommend to start with rotating the C-arm into right anterior oblique (RAO) view at 45°, place the catheter and wire in position, then change the C-arm rotation into left anterior oblique (LAO) view at 45°, readjust the catheter position, then go back to your original RAO 45°, finally advance your wire into the CLG.

Another technique described by Ren-Fu Shie et al named the “Orthogonalization method of contralateral gate cannulation”.⁷ T

he steps of this technique includes:

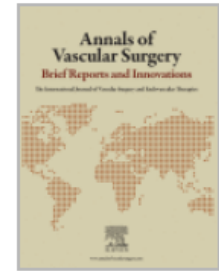
- 1-Rotate the vertebral catheter tip (Cordis Corporation, Miami, Florida) until the catheter projects as a straight line with the CLG on the screen.
- 2-Rotate the image intensifier backward 90° and rotate the catheter tip to gain the longest orthogonal projection of the catheter tip on screen.
- 3-Advance the wire and catheter into the gate.

Belong to the EVAR history








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Anatomy-based strategies for contralateral gate cannulation during EVAR ☆

Samer Koussayer^a  , Aseel Abuduruk^b  , Amjad Alkhezzi^c , Bilal Koussayer^d

What is this simple technic?

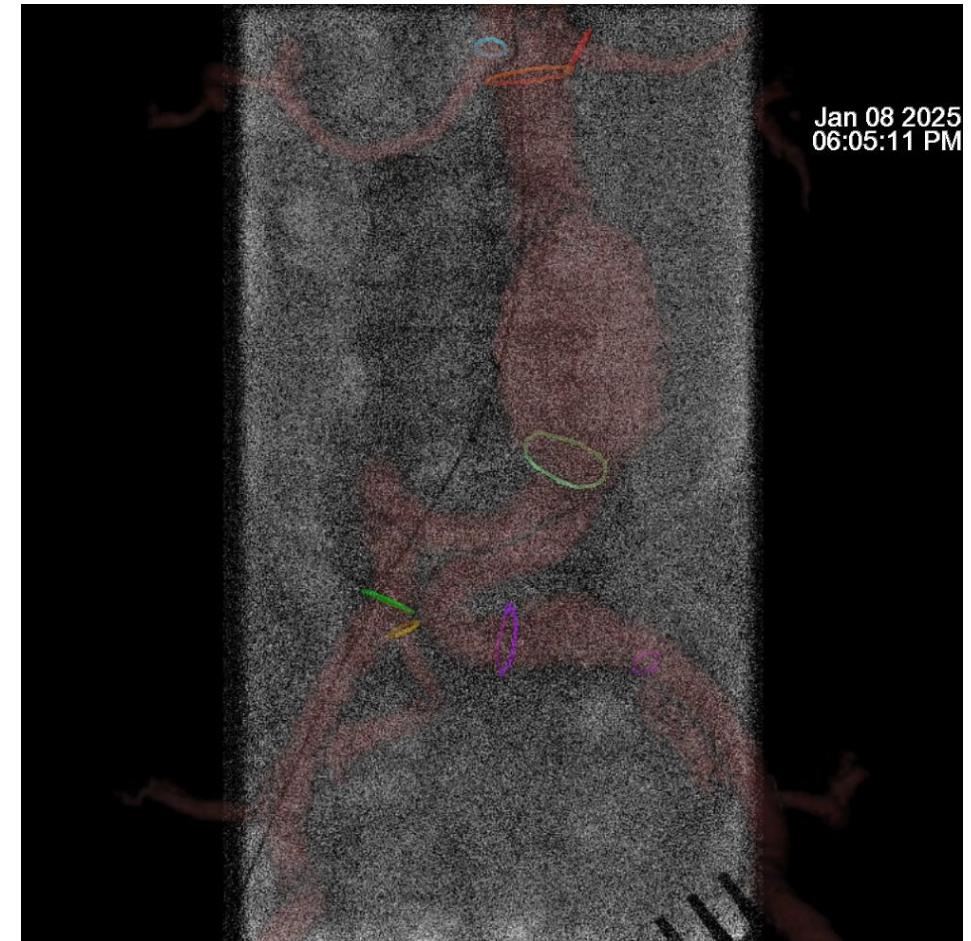
Two stiff-guides wires Technic



STANDARD EVAR (2 GUIDES TECHCNICS)

1/ Introduced extra stiff guide wire via both femoral arteries

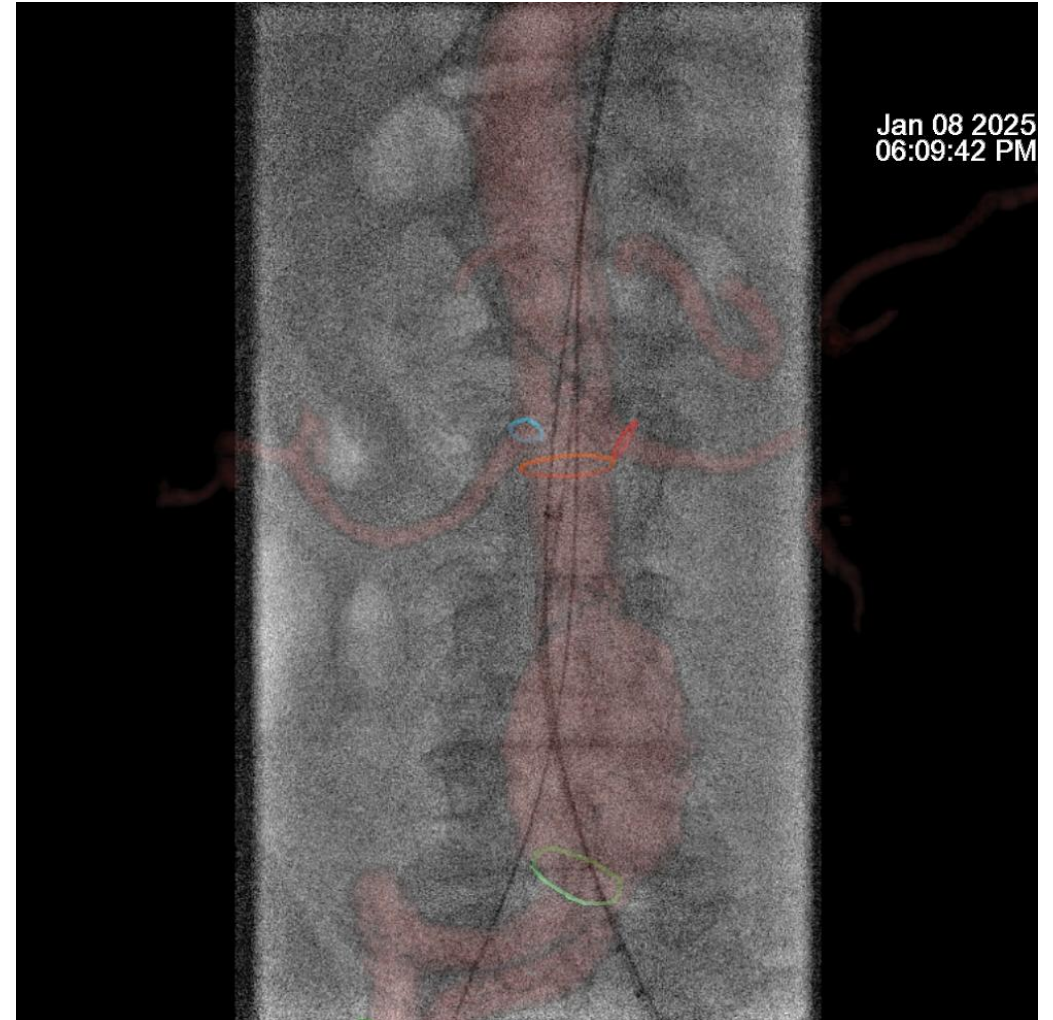
The iliac axis is straightened



STANDARD EVAR (2 GUIDES TECHCNICS)

2/ Contralateral access on the lunderquist:

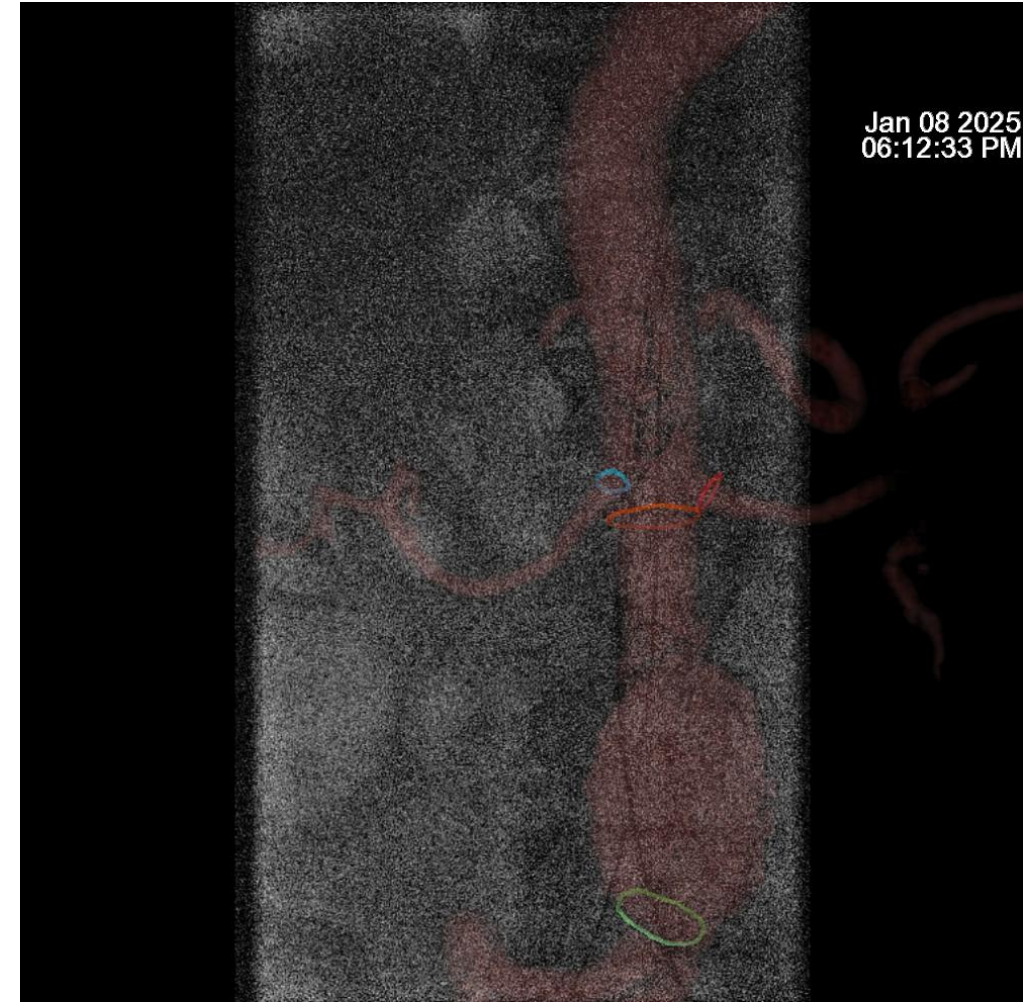
- 8 fr 55 cm introducer is positionning at the level of the renal arteries.
- Puncture the valve of the 8 fr
- **Angiography catheter is inserting in parallel** of the extra stiff guide wire



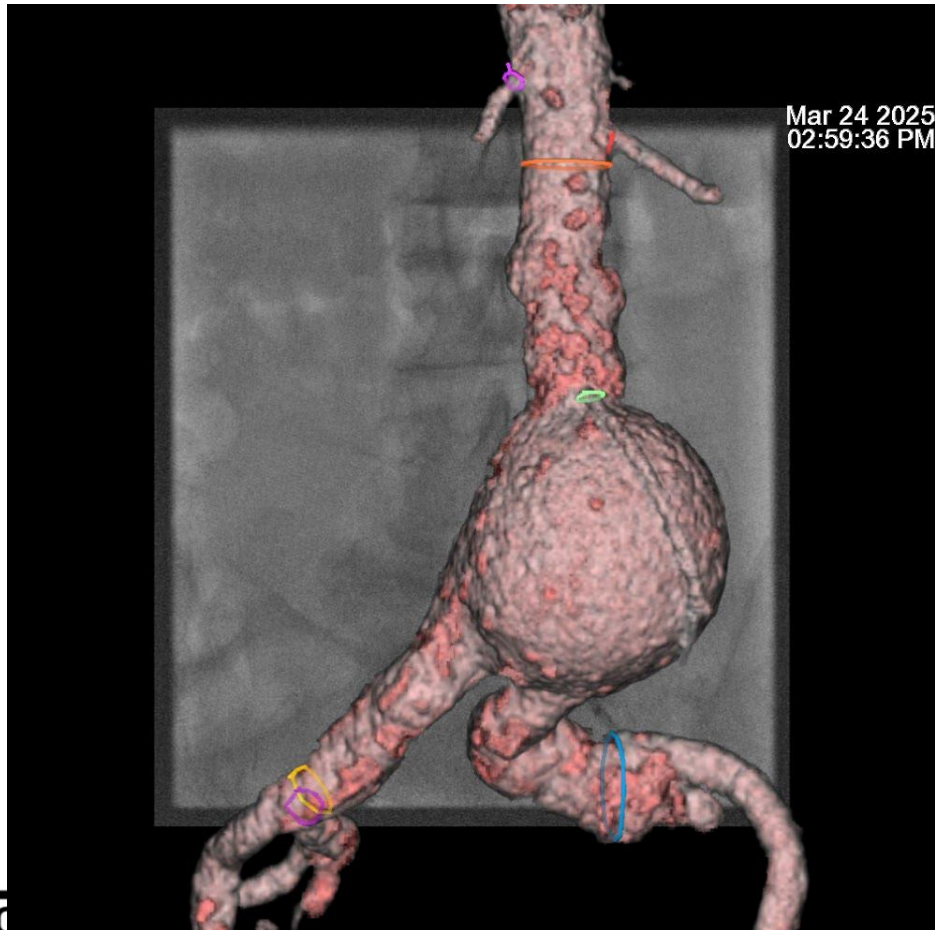
STANDARD EVAR (2 GUIDES TECHCNICS)



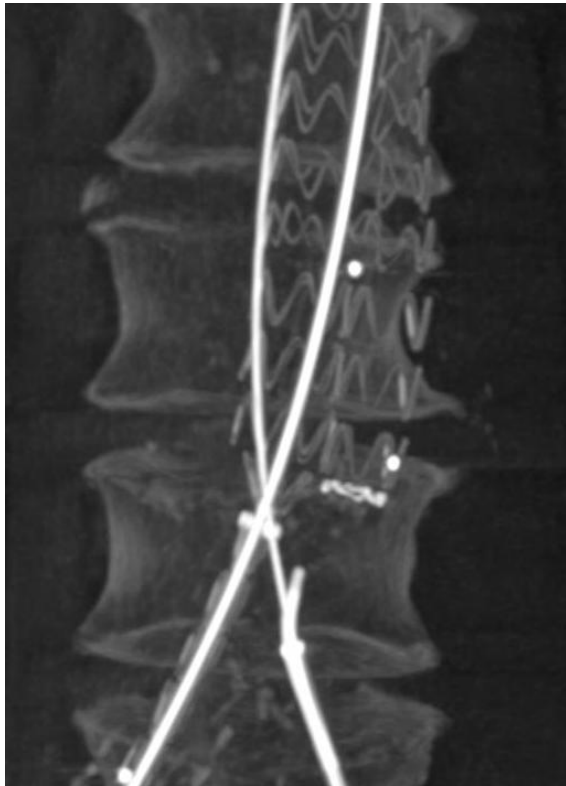
3/ Lower the introducer
below the intersection
of the two guides



What is going on inside the aneurism with this technic ?

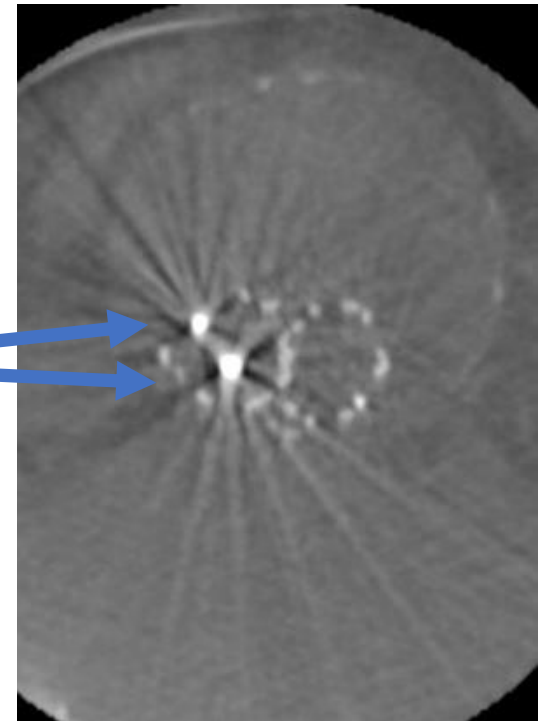


What is going on inside the aneurism with this technic ?

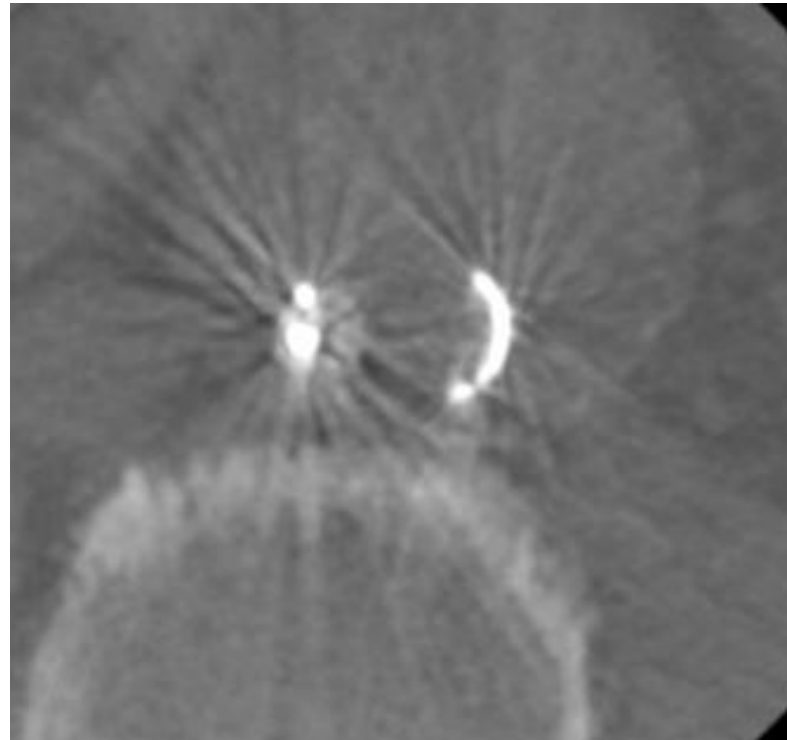
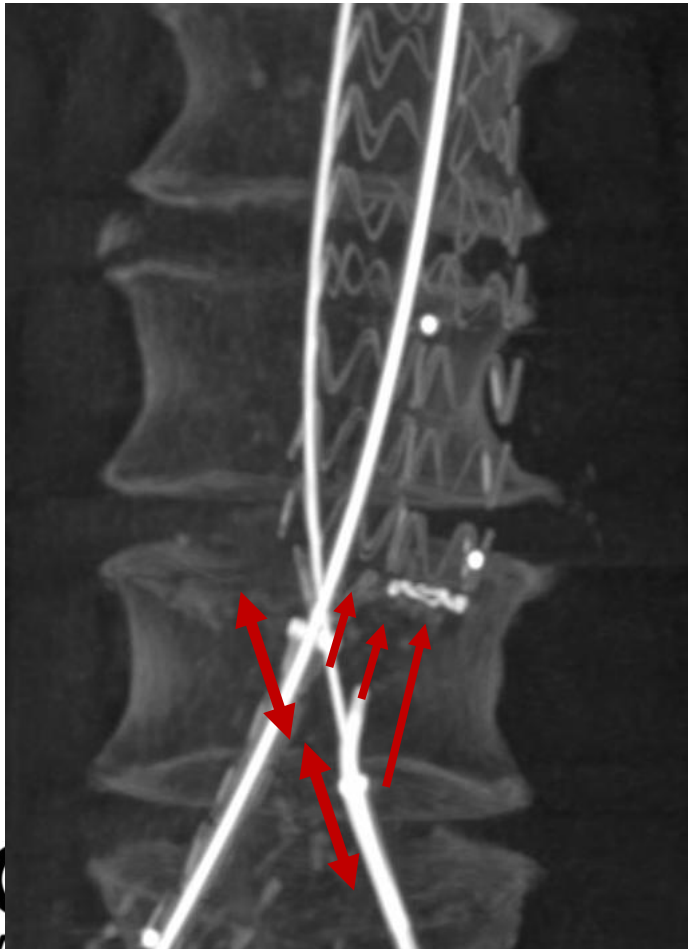


Cone beam CT

Guide wires



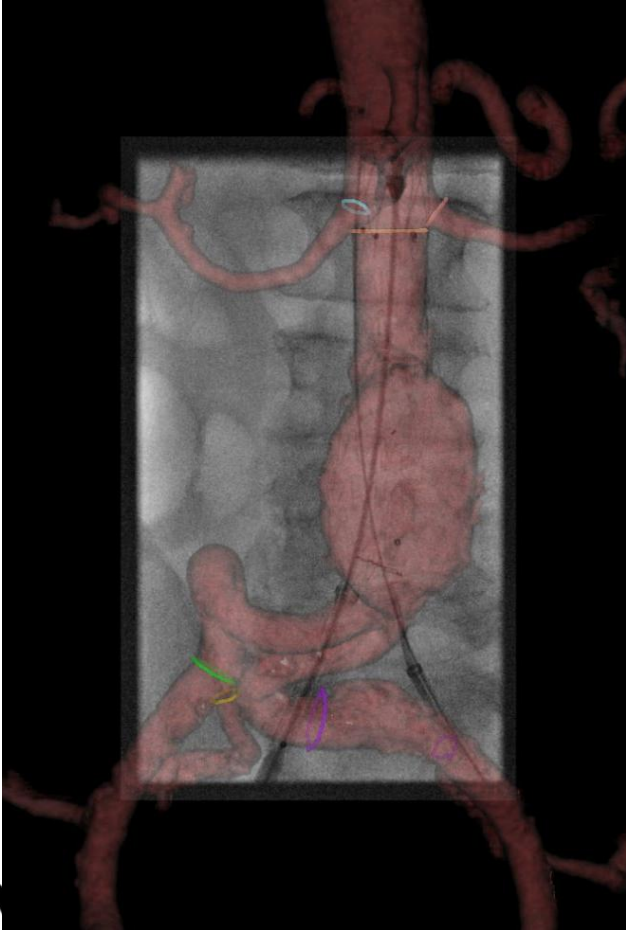
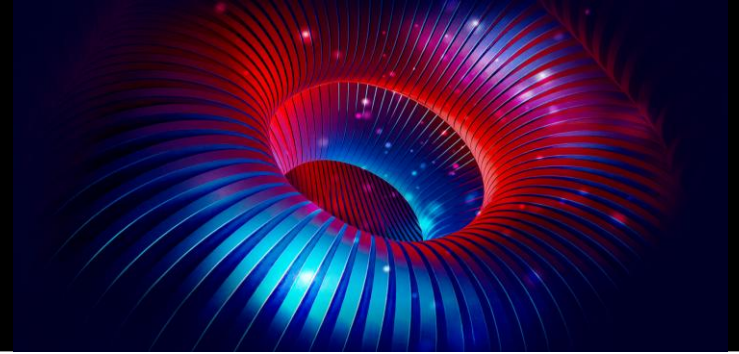
What is going on inside the aneurism with this technic ?



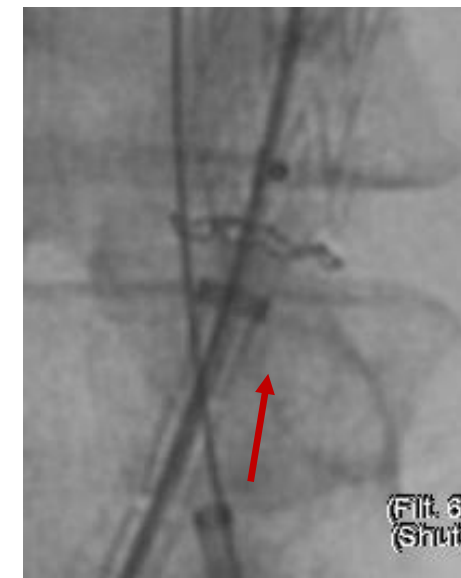
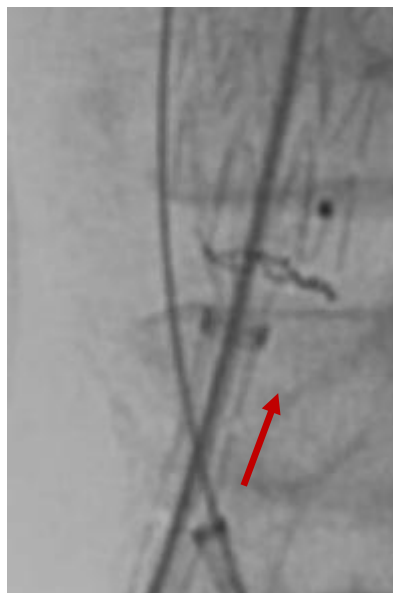
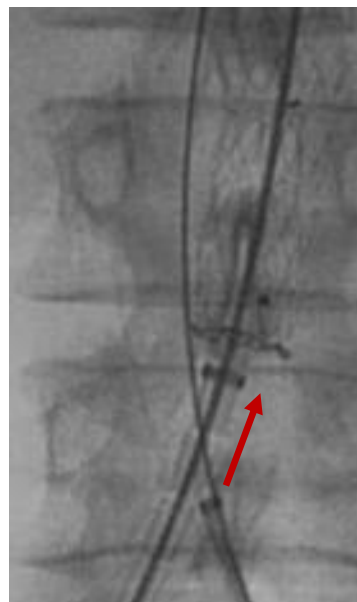
8 FR INTRODUCER
ADJUST THE LENGTH
TO THE GATE FOR A
SIMPLE CATHETERIZE



First Case



First Case



THE TWO Stiff GUIDES ***ALWAYS TOUCH EACH OTHER***

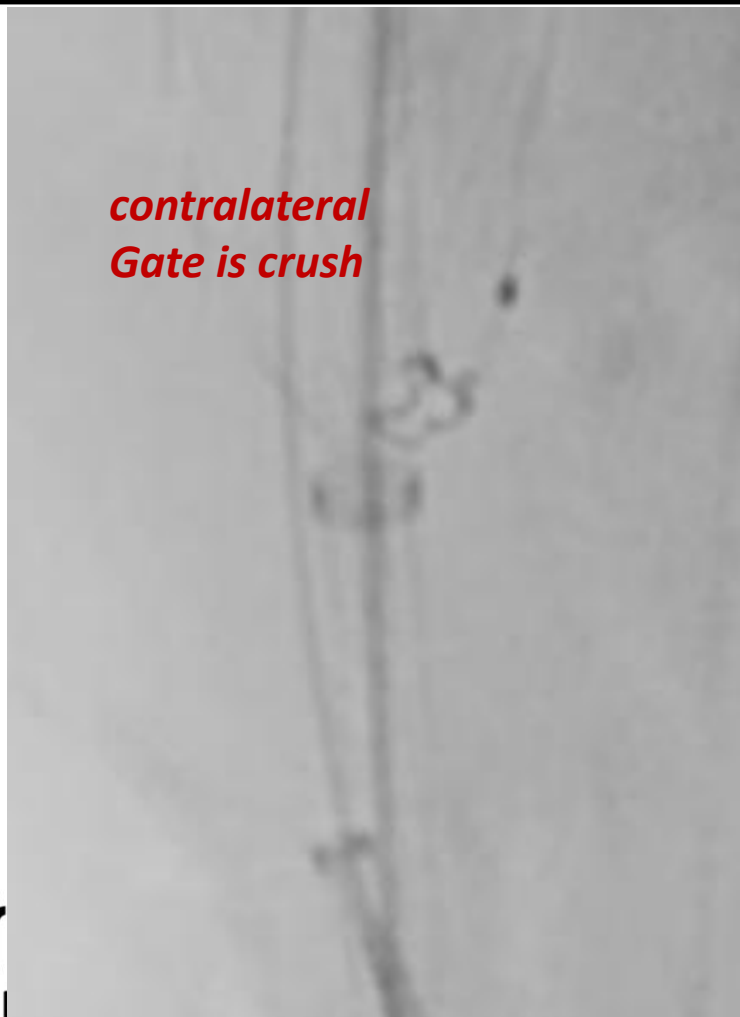
CANULATION IS NOW ONLY PERFORMED IN ONE DIMENSION

The contralateral limb is always less than 15 mm from the 8-fr introducer in anteroposterior or lateral position.

First Case



*contralateral
Gate is crush*



The introducer and the guide **provide significant support** for cannulation the compressed limb

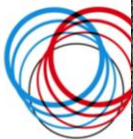
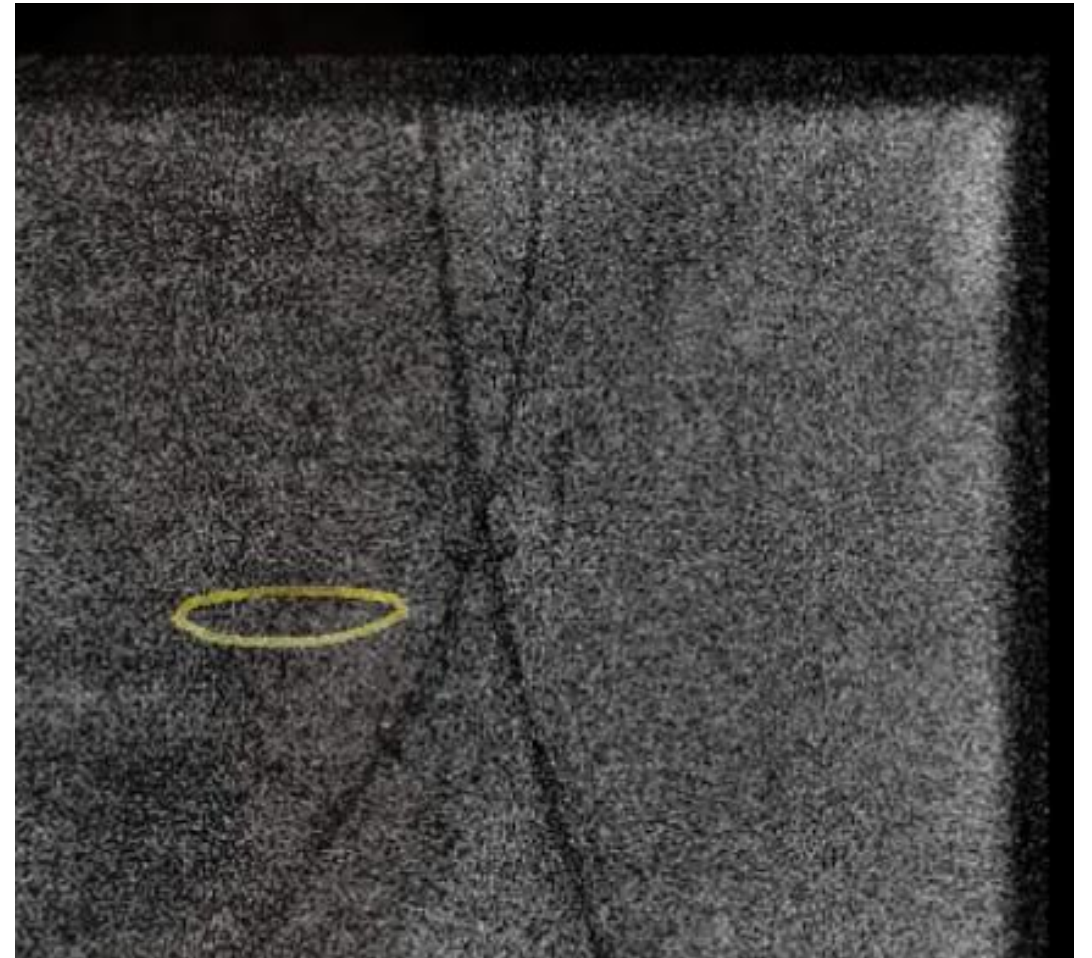
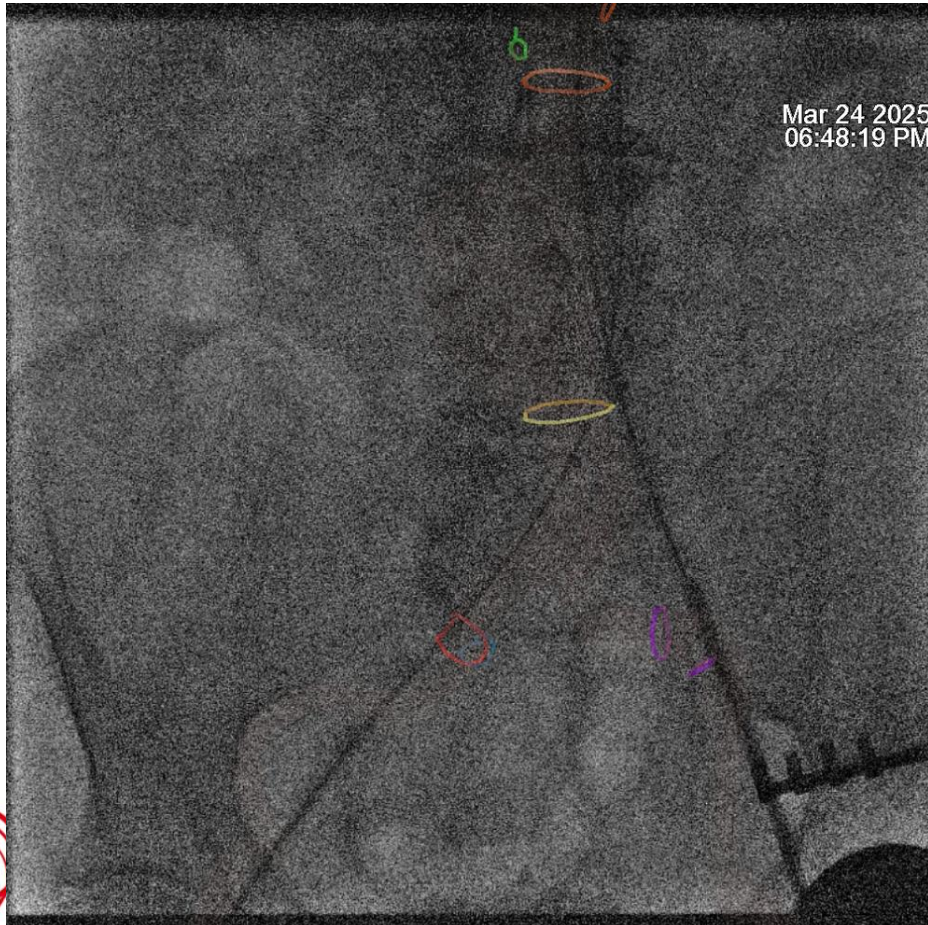
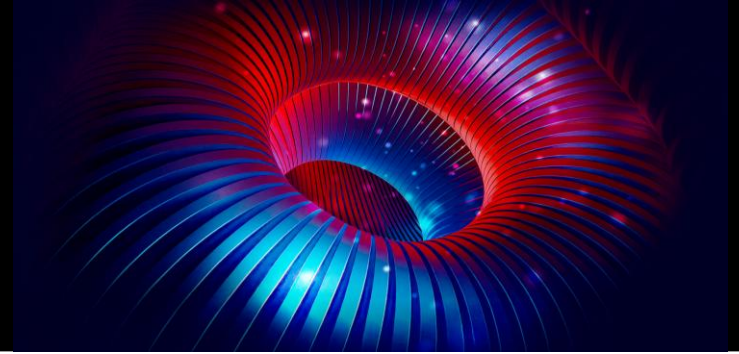


8 seconds

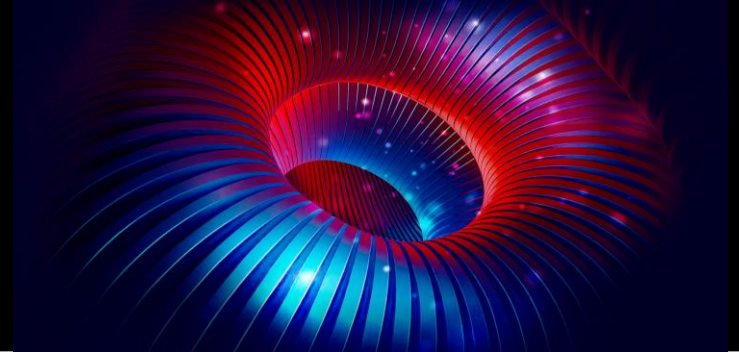
We remove the Extra stiff guide who is in parallel of the stent-graft and re insert into the catheter.



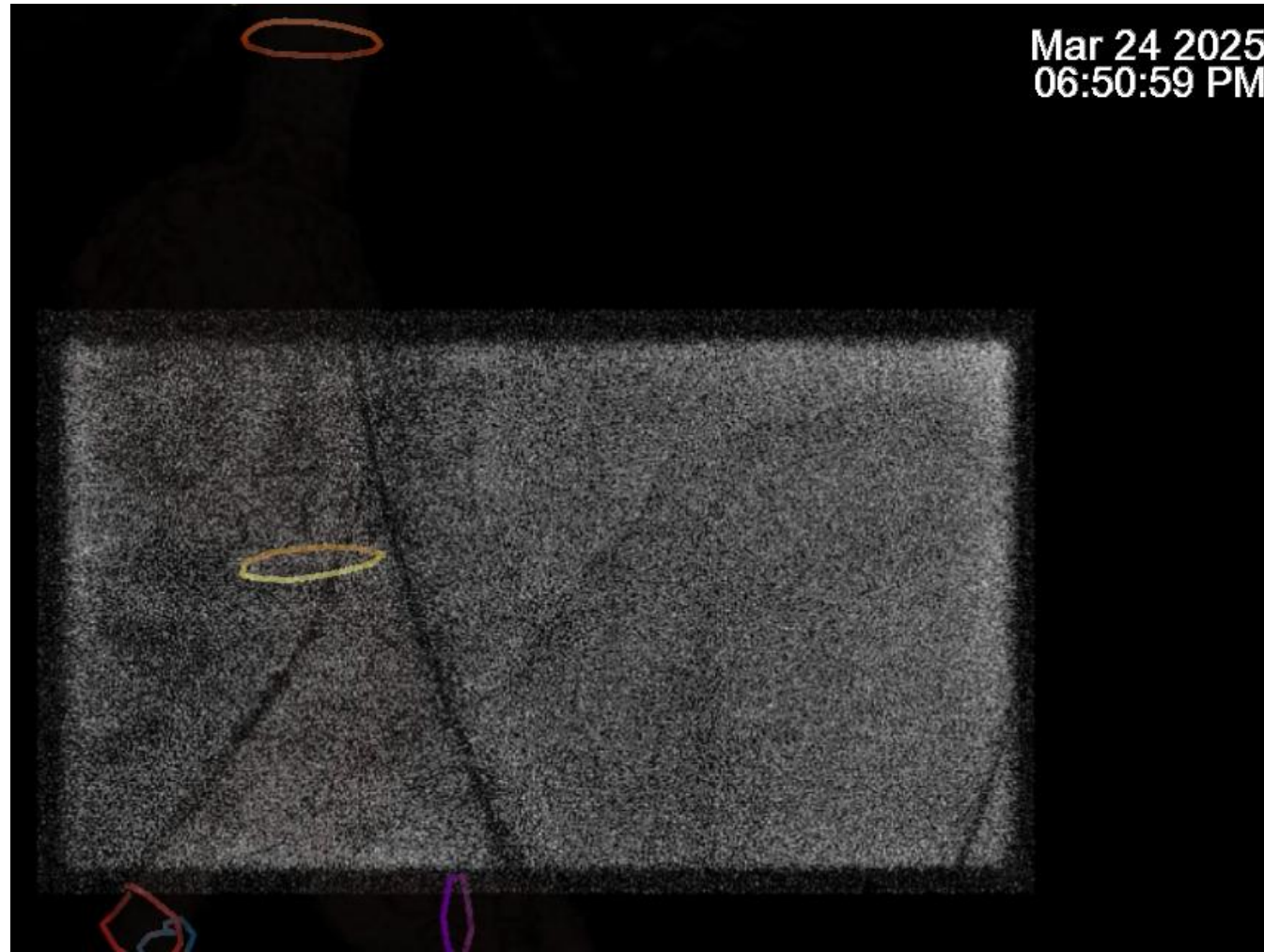
Third Case



Third Case



TO
CONVINCE
YOU.....

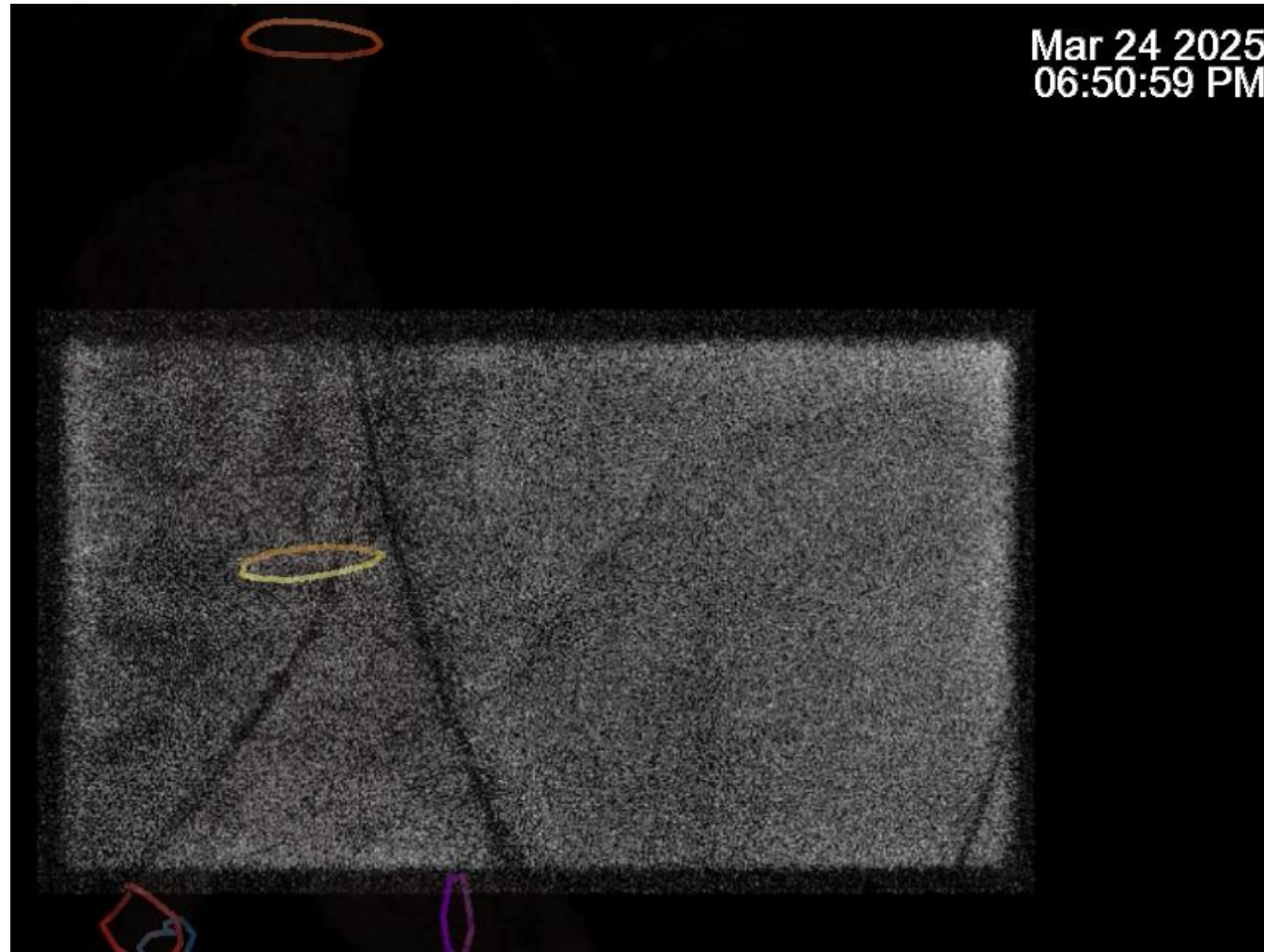


22 SECONDS

Third Case

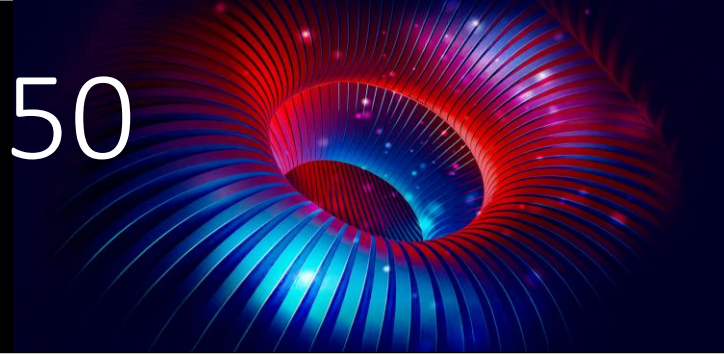


TO
CONVINCE
YOU.....



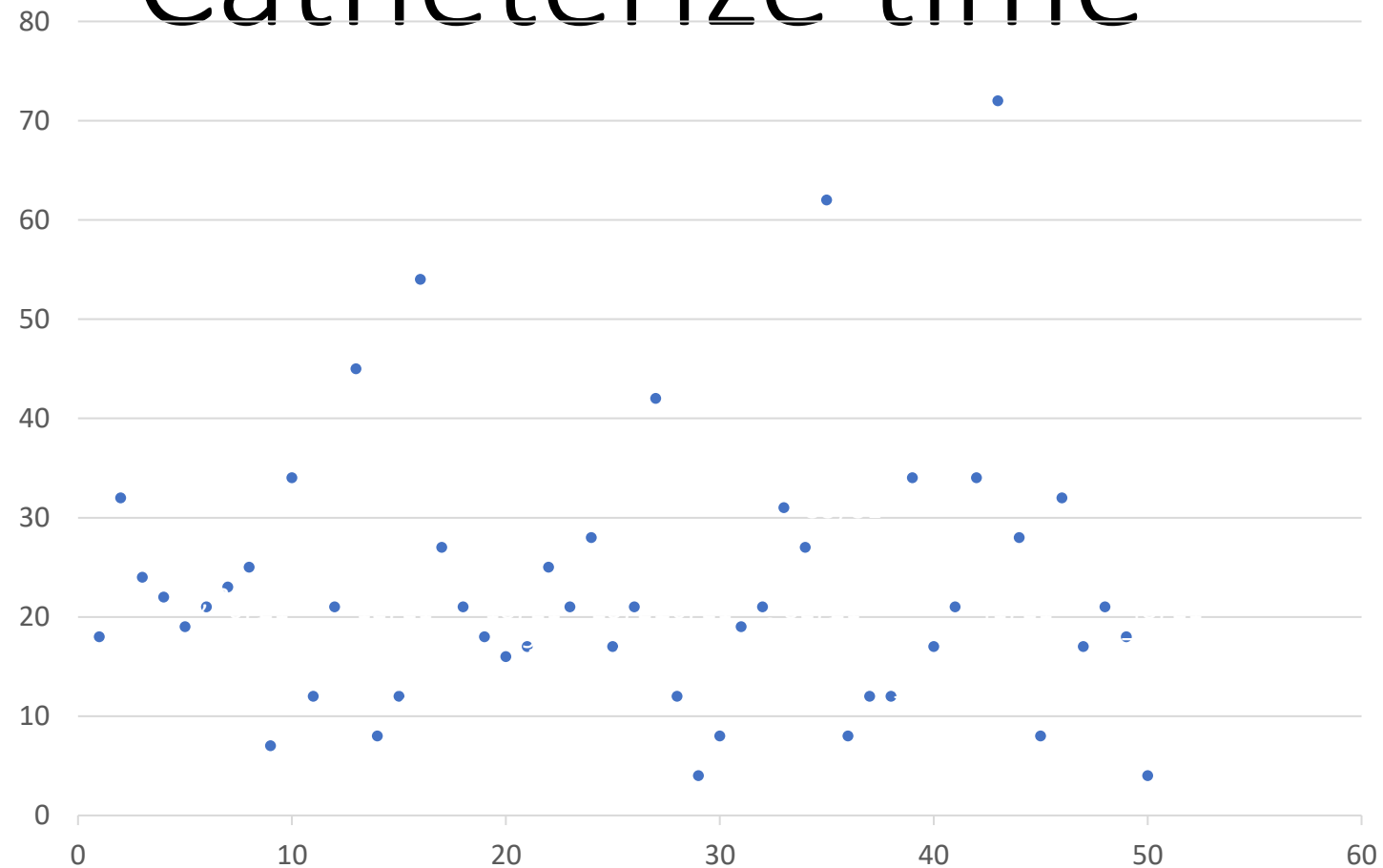
22 SECONDS

ONE SET DATA OF 50 PROCEDURES

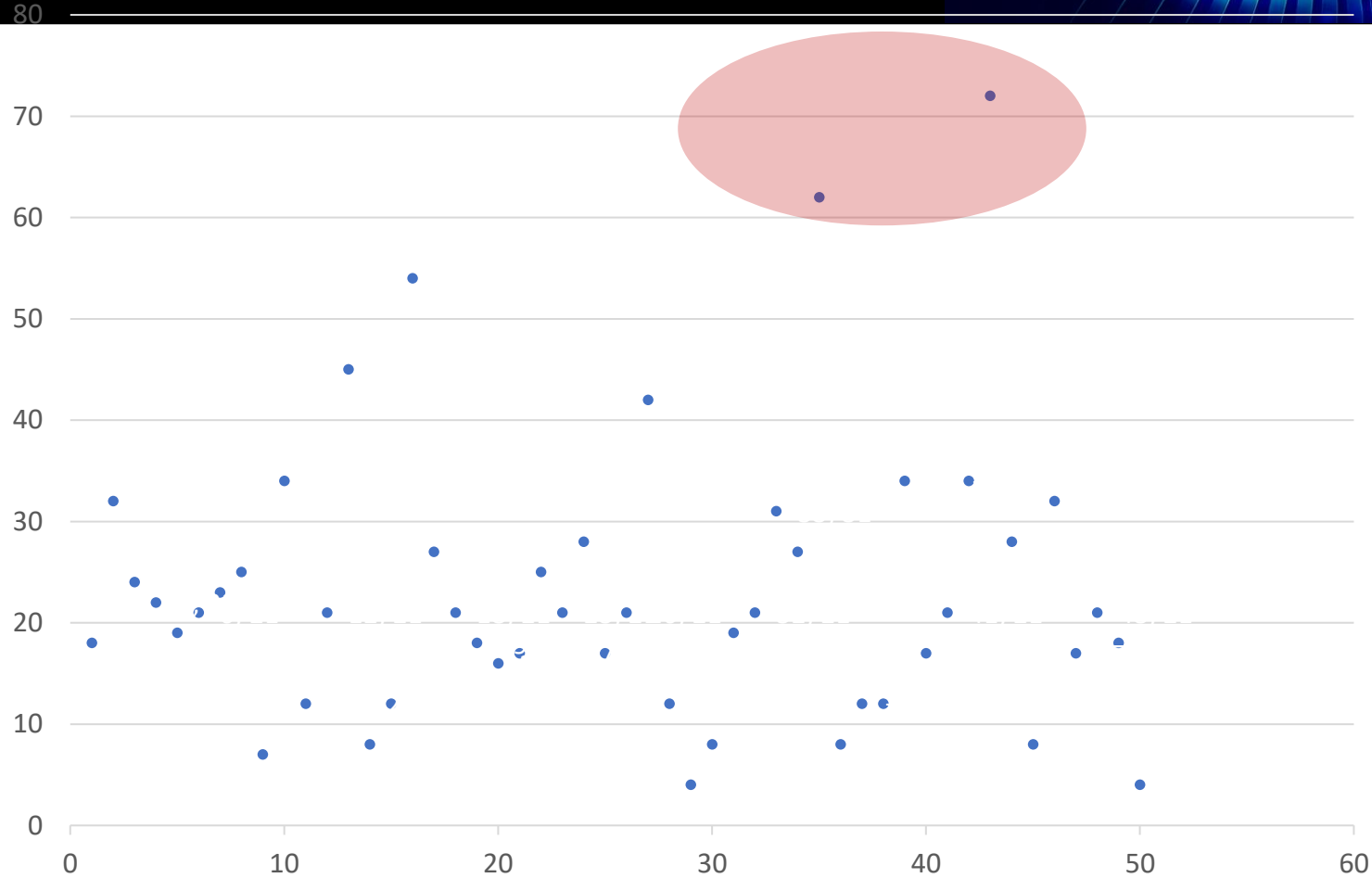
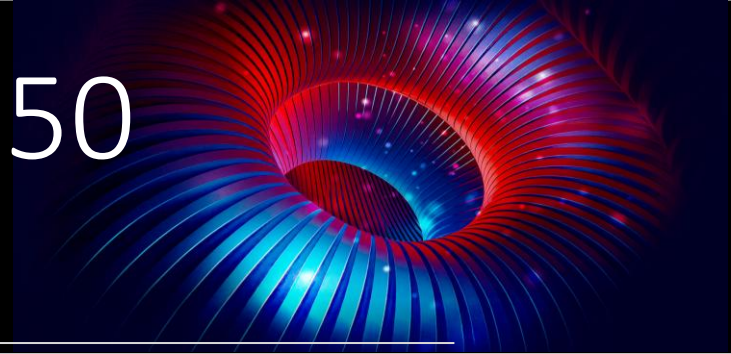


Catheterize time

50
procedures

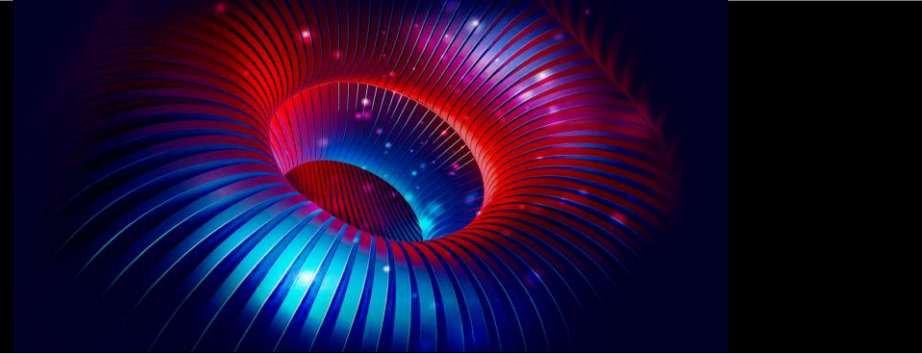


ONE SET DATA OF 50 PROCEDURES



LAST 50
procedures

Average of
21 seconds



Impact on radiation ?

EN JUIN AU CONGRES DE L'ASCV

Thank for your attention....

