ePoster

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Speed Gate Cannulation during Standard Infrarenal Endovascular Aneurysm Repair

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INTRODUCTION

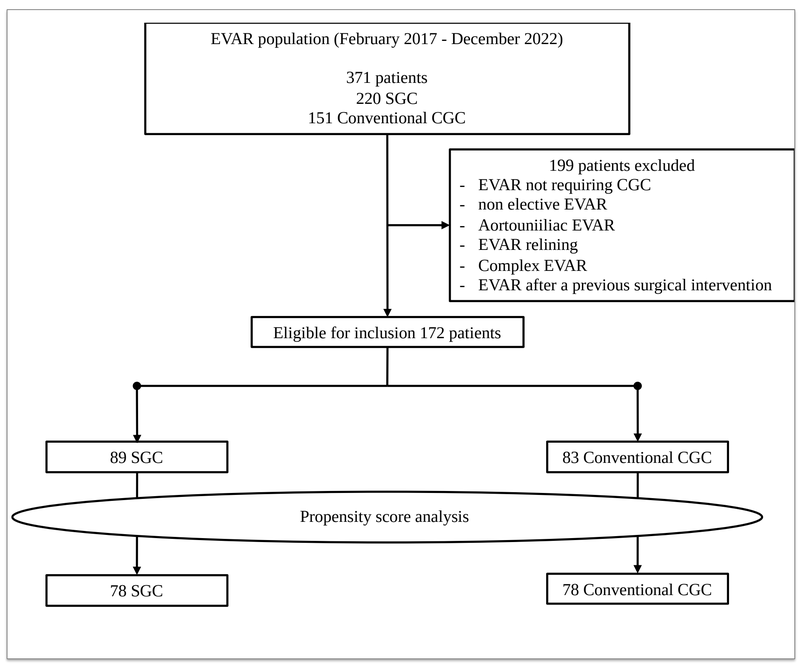
The repair of abdominal aortic aneurysms involves several steps, including contralateral gate cannulation (CGC). Standard CGC is done through contralateral femoral access, but it can be challenging in some cases, leading to longer procedure times, more radiation exposure, and higher costs. To ease and speed the CGC step, in our practice we introduced the speed-gate cannulation (SGC) technique, a simple with the reported outcomes.

Complex AAA

METHODS

The SGC technique uses a bilateral percutaneous approach placing a 10 Fr sheath bilaterally. The contralateral 10 Fr sheath is replaced with a 30 cm, 12–18 Fr DrySeal introducer sheath, advanced into the aorta at the lowest renal artery. A short dilator and a 0.035-inch J-tip guidewire are utilized for this step for a buddy wire a 5 Fr pigtail angiographic catheter is positioned above the renals. The main body is advanced at the renal arteries, aligning the contralateral gate with the contralateral buddy- wire. After lowering the DrySeal introducer below the contralateral gate markers and performing an aortography, we deploy the stent-graft. The J-tip guidewire is then adjusted to align with the contralateral gate. The CGC procedure starts with the pigtail and J-tip guidewire, which can be exchanged as needed. After completing CGC, the pigtail is advanced to the ascending aorta, and we switch to the J-tip guidewire, proceeding with the EVAR steps as per standard device instructions.

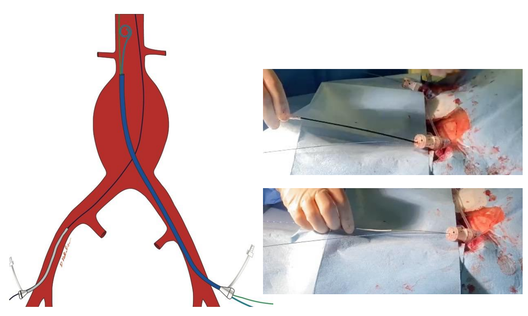
Inclusion and exclusion criteria



Operative Steps - Tecnique

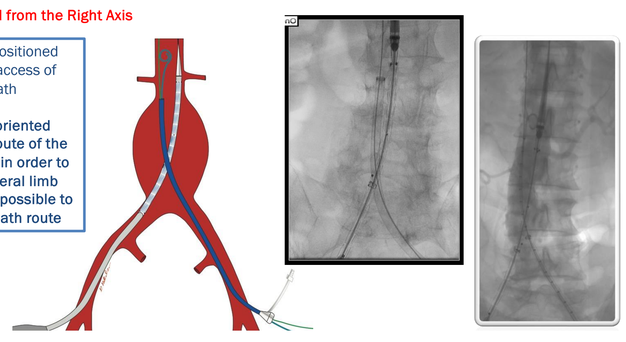
Buddy wire - Left Axis

- From the main body contralateral access
- A 30 cm 12 to 18 Fr introducer sheath is inserted over a stiff wire and advanced into the aorta below the proximal neck.
- Coaxially insertion of an additional 0.035-inch standard J-tip guidewire with a 5 fr Pigtail angiographic catheter through an inflatable valve.



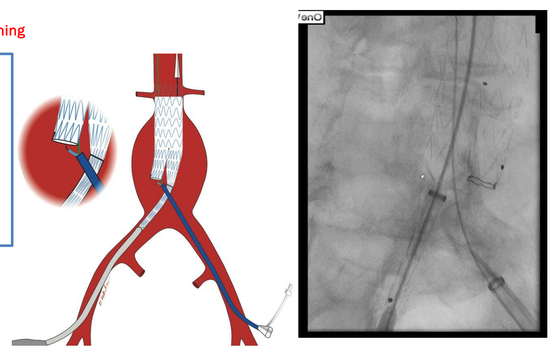
Main body positioned from the Right Axis

- The main body is positioned from the opposite access of the supported sheath
- The main body is oriented according to the route of the supported sheath in order to have the contralateral limb opening closer as possible to the supported sheath route



Retrieve the Sheath at CLG opening

- The supported sheath is retrieved until the level of the contralateral limb
- The main body is deployed
- The coaxial wire with catheter are retrieved and employed to catheterize the contralateral limb



RESULTS

A propensity score analysis was conducted on 172 patients, resulting in 156 included in the study—78 from the conventional CGC group and 78 from the SGC group. The mean follow-up was 38.77±21 months for the CGC group and 37.46±20 months for the SGC group (p=0.17). After matching, no significant differences were found in overall operative time (73 min vs. 77 min; p=0.07). However, the SGC group showed significant reductions in: - CGC time: 4 min vs. 8 min (p=0.001) - Mean contrast medium: 61 mL vs. 77 mL (p=0.03) - Fluoroscopy time: 12 min vs. 17 min (p=0.001) - DAP: 15 G*cm² vs. 26 G*cm² (p=0.002) - CGC fluoroscopy: 45 sec vs. 96 sec (p=0.001) Aortic neck angulations correlated with cannulation time (p=0.02), and the presence of sacciform morphology also influenced this (p=0.04). The technical success rate was 100%, with no perioperative mortality or type I/III endoleaks in either group. One case of perioperative iliac leg occlusion occurred in the SGC group.

Operative details

	Unmatched Cohort			Matched Cohort			
Variables	**SGC (89)**	**STD (83)**	**P**	**SGC (78)**	**STD (78)**	**SE Diff**	**P**
Stents graft fabric							
Endurant, n (%)	64 (71.9)	63 (75.9)	0.42	58 (74.4)	59 (75.6)	0.12	1
Endologix, n (%)	16 (18)	13 (15.7)	0.5	13 (16.7)	12 (15.4)	0.12	1
Zenith, n (%)	5 (5.6)	4 (4.8)	0.3	4 (5.1)	4 (5.1)	0.15	1
Excluder, n (%)	4 (4.5)	3 (3.6)	0.3	3 (3.8)	3 (3.8)	0.13	1
Number of components, n [IQR]	2 [1-3]	3 [1-4]	0,16	2 [1-3]	3 [1-3]	1	0.8
"Ballerina" configuration, n (%)	48 (54)	42 (50.6)	0.54	41 (52.6)	41 (52.6)	0.21	0.71
Operative time, min [IQR]	66 [60-75]	79 [68-85]	0.73	73 [67-85]	77 [74-86]	2.1	0.07
CGC time, min [IQR]	3 [1-5]	12 [7-17]	**<0.001**	4 [1-6]	8 [6-14]	1.2	**0.001**
Mean contrast medium, ml [IQR]	55 [45-72]	81 [77-93]	**<0.001**	61 [50-72]	77 [71-92]	1.3	**0.03**
Fluoroscopy time, min [IQR]	11 [8-14]	21 [13-23]	**<0.001**	12 [9-16]	17 [12-25]	1.4	**0.001**
DAP, G*cm2 [IQR]	14 [9-18]	32 []	**<0.001**	15 [9-21]	26 [16-34]	0.1	**<0.001**
CGC Fluoroscopy time, sec [IQR]	45 [27]	96 [32]	**<0.001**	45 [2665]	96 [70-133]	1	**0.001**

Pearson Correlation

Aneurysm behavior		CGC time	Stents graft fabric		CGC time
MATD	Correlation	-0.108	**Endurant**	Correlation	-0.043
	Sig (2-t)	0.48		Sig (2-t)	0.777
Neck length	Correlation	-0.139	**Endologix**	Correlation	0.164
	Sig (2-t)	0.161		Sig (2-t)	0.281
Neck angle	Correlation	-0.347	**Zenith**	Correlation	-0.1
	Sig (2-t)	**0.02**		Sig (2-t)	0.513
Neck diameter	Correlation	0.05	**Excluder**	Correlation	-0.144
	Sig (2-t)	0.744		Sig (2-t)	-0.344
Right CIA involvement	Correlation	0.1	**Number of components**	Correlation	-0.22
	Sig (2-t)	0.513		Sig (2-t)	0.146
Left CIA involvement	Correlation	0.154	**"Ballerina" configuration**	Correlation	-0.093
	Sig (2-t)	0.312		Sig (2-t)	0.544
Sacciform Shape	Correlation	0.387	**Operative time**	Correlation	-0.071
	Sig (2-t)	**0.04**		Sig (2-t)	0.644

Survival & Freedom from Reintervention

CONCLUSIONS

In this initial experiment, the use of SGC during EVAR was found to be feasible with no significant postoperative complications. The SGC did not lead to an increase in overall procedure time but did result in a significant reduction in contrast medium usage, radiation exposure, and CGC time. It is recommended to deploy the stent-graft main body in a crossed limb configuration when guidewires are crossed at the level of the aortic bifurcation. The SGC is a simple additional technique and should be considered in standard EVAR, especially in emergency scenarios where time is critical.

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