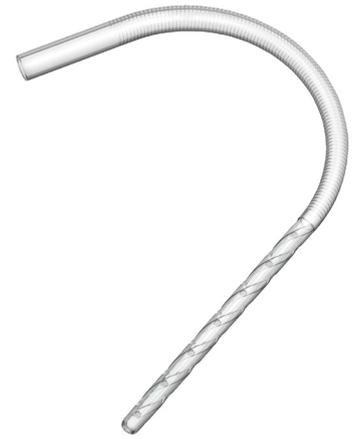


# OPTIFLOW™ Venous Cannula

## Superior vena cava cannulation in aortic valve surgery: an alternative strategy for hemisternotomy approach

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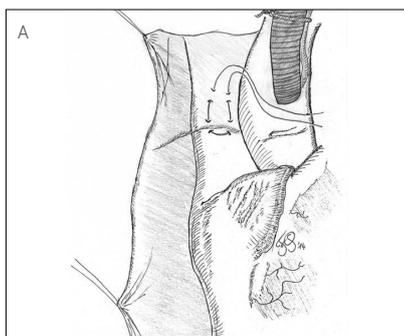


### INTRODUCTION

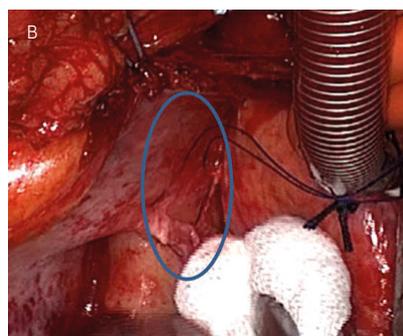
- *"Minimally invasive aortic surgery is increasingly being utilized, in particular, through ministernotomy."*
- *"Venous cannulation may result in wound complications if the femoral vein is used, or may be bulky if the right atrial appendage is used."*
- *"Our technique of superior vena cava cannulation [with Sorin Optiflow venous cannula] not only avoids the risk of complications related to the groin but also provides good visualization of the aortic valve making valve implantation easier, especially when using sutureless bioprosthetic valves."*

### TECHNIQUE

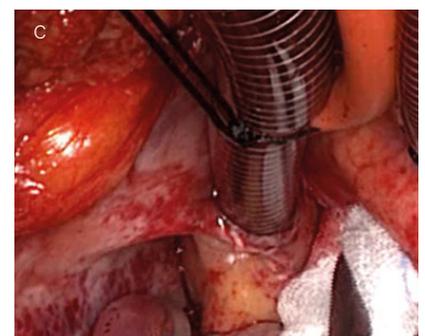
- *"In all the patients selected for this new surgical approach, a J-shaped sternotomy was performed with a right incision between the third and fourth rib."*
- *"Avoiding a wide opening of the retractor that would generate lacerations and ischaemia, the right atrial appendage is often low and distal, practically impossible to cannulate."*
- *"Our alternative to avoiding femoral venous cannulation consists of performing a gentle traction on the left of the aorta manually or using a blunt tool."*
- *"With this movement, exposure of the medial aspect of the superior vena cava can be easily achieved."*
- *"At this point, a purse-string suture is created with a 4/0-polypropylene stitch."*
- *"Inside the suture, regardless of the patient body weight, a 29-Fr Optiflow venous cannula (Sorin Group, Saluggia, Italy), armed with a stylet for the orotracheal tube and gently curved at the extremity, is placed and connected to the cardiopulmonary bypass circuit, allowing the cannula to exit the surgical field with a right and upward arching."*
- *"Once cardiopulmonary bypass is established, the cannula position and adequate drainage make aortic valve replacement easier."*



(A) Figure showing the purse-string suture in the superior vena cava.



(B) The purse-string suture in the medial aspect of the superior vena cava (blue circle).



(C) The venous cannula in situ, exiting the surgical field with a right and upward arch.

Figure 1.

## DISCUSSION

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- *"In our experience, the innovative small-sized, 29-Fr Optiflow cannula provides high-flow drainage across the entire cannula inserted into the right atrium without the need for double cannulation and with no increase in central venous pressure."*
- *"Besides the advantages of avoiding peripheral cannulation with its inherent risks, an incision in the third intercostal space may favour sternal closure stability, with a lower rate of wound complications and a cosmetically more acceptable postoperative scar."*
- *"None of our 23 patients developed superficial or deep wound complications."*
- *"In addition, the venous cannula output directed upwards and to the right is less bulky during intraoperative aortic exposure compared with the cannula in the right atrial appendage inserted downwards and to the right of the surgical access."*
- *"Therefore, this approach allows one to maintain one advantage of peripheral cannulation (only one cannula was used in a limited space), avoiding the risks related to femoral access."*

## CONCLUSION

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- *"In conclusion, this cannulation technique is simple, safe, reproducible and free of complications."*
- *"In addition, it provides effective venous drainage, is less bulky and simplifies the surgical view in an MIS."*

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