

# The Cor-Knot Device May Serve as an Ideal Radiopaque Marker of the Annular Plane for Future Valve-in-Valve Implantation

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A 55-year-old man underwent aortic root and ascending aortic replacement with a 27-mm Freestyle porcine neoroot with reimplantation of the coronary ostia as well as ascending aortic replacement with a 28-mm straight Dacron graft. A knot-tying device consisting of radiopaque

Titan clips (Cor-Knot device, LSI Solutions, Inc, Victor, NY) for anchoring the porcine neoroot was used.

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Reoperation as a result of bioprosthetic degeneration is an issue, and valve-in-valve therapies do gain increased acceptance and impact. Consequently, the Cor-Knot device might serve as an ideal radiopaque marker of the annular plane for future valve-in-valve implantation.

## Technique

A 55-year-old man was referred for elective aortic root and ascending aortic replacement as a result of aortic

insufficiency, and root and ascending aortic ectasia on the basis of a calcific degeneration of a bicuspid aortic valve. He underwent aortic root and ascending aortic replacement with a 27-mm Freestyle porcine neoroot (Medtronic, Minneapolis, MN) with reimplantation of the coronary ostia as well as ascending aortic replacement with a 28-mm straight Dacron graft (Maquet Holding BV & Co KG, Rastatt, Germany).

As it is our routine, pledget-armed 2-0 TiCron sutures (Covidien, Dublin, Ireland) were brought into place and then advanced through the base of the porcine neoroot. Instead of conventional knot tying, a knot-tying device (Cor-Knot device; LSI Solutions, Inc, Victor, NY) was used. After having accomplished this step, the operation

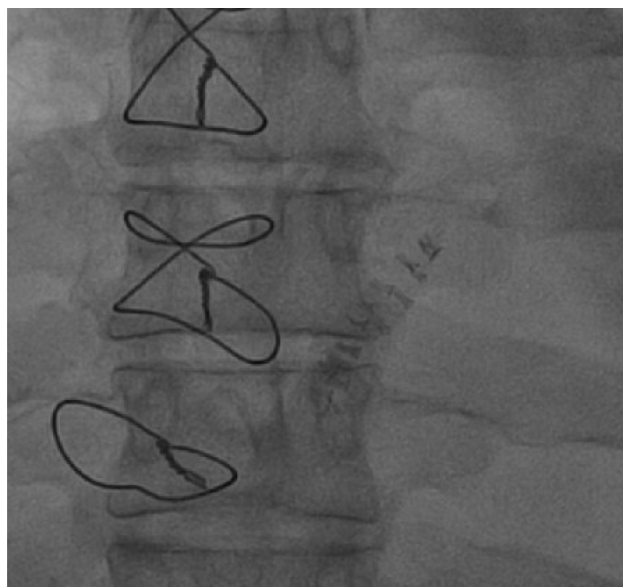


Fig 1. Fluoroscopy showing an anteroposterior view of the Titan clips marking the annular plane.

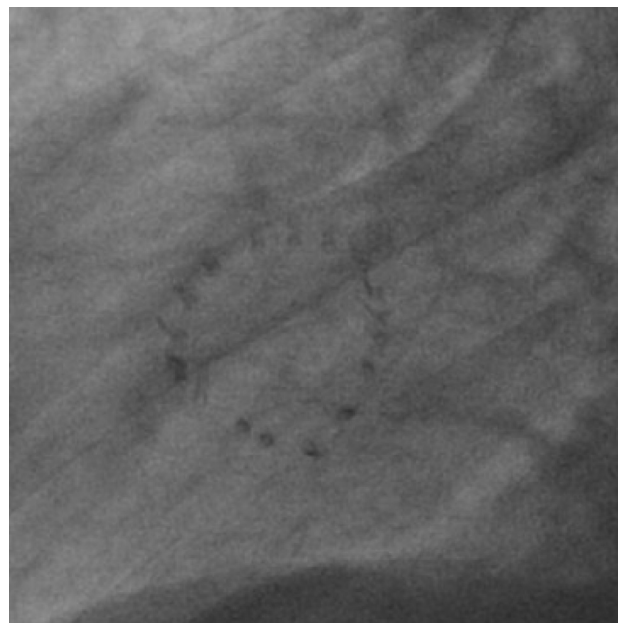


Fig 2. Fluoroscopy showing a left anterior oblique view of the Titan clips marking the annular plane.

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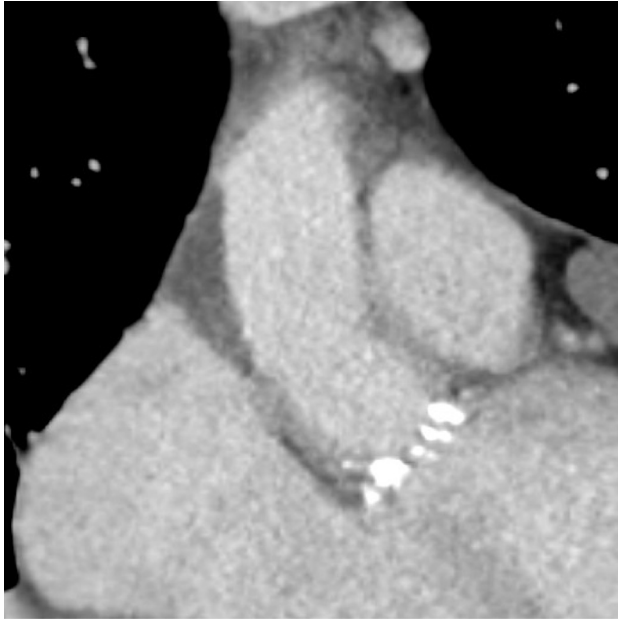


Fig 3. Screenshot of a postoperative coronal computed tomographic scan depicting the annular plane by the Titan clips.

was continued and finished in a routine fashion. Before discharge, fluoroscopy was performed to illustrate the

radiopaque ability as well as the spatial orientation of the Titan clips of the Cor-Knot device in relation to the annular plane of the neoroot (Figs 1, 2). Figure 3 shows a postoperative coronal computed tomographic scan depicting the annular plane by the Titan clips. Theoretically, it might be sufficient to mark the annular plane by placing three clips at evenly distributed locations.

### Comment

The rationale of this approach is not primarily thought to be for saving aortic cross-clamp time as this might not be of any impact in aortic root replacement. However, reoperation because of bioprosthetic degeneration is an issue, and valve-in-valve therapies have gained increased acceptance and impact [1, 2]. Consequently, the Cor-Knot device might serve as an ideal radiopaque marker of the annular plane for future valve-in-valve implantation.

### References

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