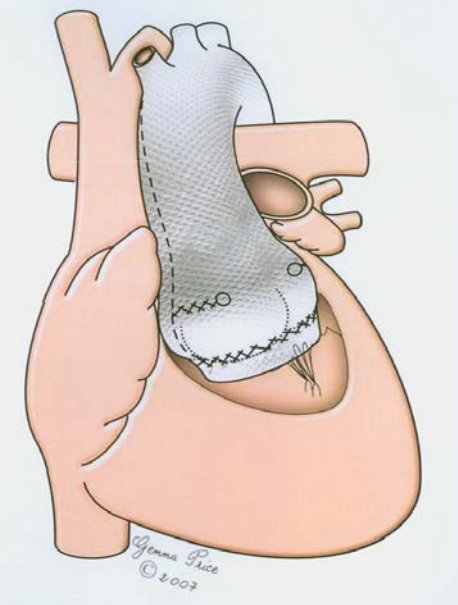
ExoVasc®

Personalised External Aortic Root Support (PEARS)

The new approach to the surgical management of the dilated aorta



Personalised External Aortic Root Support (PEARS) is now emerging as an effective pre-emptive operation to halt aortic root expansion and maintain aortic valve function in Marfan syndrome and is also applicable in treating aortic root dilatation to prevent aneurysms associated with other aetiologies[1].

The ExoVasc® Personalised External Aortic Root Support is an alternative to aortic root replacement. A custom-made mesh sleeve is manufactured to exactly match the precise shape of the patient's ascending aorta. The ExoVasc implant is placed around the ascending aorta, which remains in place, supporting the vessel and the valve.

The benefits of avoiding aortic root replacement include a shorter surgical procedure, less need for cardiopulmonary bypass, a lower risk of requiring further surgery and elimination of the need for lifetime anticoagulant therapy. The soft and pliable open mesh of the ExoVasc is quickly incorporated as part of the aortic wall, and the support provided prevents further dilatation and allows regeneration of the media.

[1] Treasure T, Petrou M, Rosendahl U, Austin C, Rega F, Pirk J, Pepper J. *Personalized external aortic root support: a review of the current status.* Eur J Cardiothorac Surg (2016) 1-5 doi:10.1093/ejcts/ezw078

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ExoVasc® PEARS implant – for a better patient outcome

For the patient, conventional root replacement surgery is a daunting procedure. Recent multicentre studies[2,3] have highlighted the residual risks of total root replacement and valve sparing root replacement, with a 0.7% risk per year of thromboembolic complications in total root replacement and a 1.3% per year risk of valve failure requiring re-operation in the valve sparing procedure. This translates into a level of risk that most patients would find unacceptable; with more than a quarter of patients with total root replacement having one or more thromboembolic events in their lifetime and half of those having a valve sparing procedure requiring a subsequent aortic root operation.

The ExoVasc PEARS implant offers several key advantages over conventional root replacement surgery:

- The implant can be placed before the aorta reaches a size at which root replacement is mandatory by established criteria – thus offering the patient peace of mind and an earlier reduction of the risk of aortic dissection
- The aortic valve is spared and the architecture of the aortic valve is maintained, reducing the risk of aortic regurgitation
- The procedure to fit the ExoVasc PEARS implant is shorter than that for root replacement (typically 2 hours rather than 5-6)
- There is usually no requirement for cardiopulmonary bypass during surgery
- There is no requirement for lifetime anticoagulant therapy
- The reinforced aorta reverts to a structure similar to that of a normal aorta, the patient's own valve is supported and further surgery is unlikely to be necessary

Growing clinical experience

More than 100 patients have now received the ExoVasc support for their aorta. The first patient received their support over 13 years ago, the total patient experience has now exceeded 400 patient-years, and the ExoVasc support has proven successful in every case in which it has been implanted. The overall clinical experience has been described in 33 peer reviewed clinical publications[4].

For more information

To find out more about joining the growing list of surgical centres offering the ExoVasc PEARS surgery, please contact Exstent Limited or your local represeantative.

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[2] Benedetto U, Melina G, Takkenberg JM, Roscitano A, Angeloni E, Sinatra R *Surgical Management of aortic root disease in Marfan syndrome: a systematic review and meta-analysis.* 2011, Heart, Vol. 97, pp. 955-8.

[3] Coselli JS, Volguina IR, LeMaire SA, Sundt TM, Connoly HM, Stephens EH, Schaff HV, Milewicz DM, Vricella LA, Dietz HC, Minard CG, Miller C. *Early and one-year outcomes of aortic root surgery in Marfan syndrome patients: a prospective, multicenter, comparative study.* 2014, Journal of Thoracic and Cardiovascular Surgery, Vol 147, pp 1758-66.

[4] See https://exstent.sharefile.com/d-s9f315aedaf44bdda

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