

# Rekonstrukcija korjena aorte uz prezervaciju zalistka i ugradnju ekstraortnog prstena: početni rezultati

## Remodeling technique of valve sparing root replacement with external ring annuloplasty: initial results

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**Uvod:** Zamjena aortnog zalistka još uvijek je najčešća metoda liječenja aortne insuficijencije (AR). Rekonstrukcija aortnog zalistka predstavlja atraktivnu alternativu, jer izbjegavamo komplikacije povezane s umjetnim zalistkom.<sup>1,2</sup> Ovdje prikazujemo naše dosadašnje iskustvo sa rekonstrukcijom korjena aorte uz prezervaciju zalistka i ugradnju ekstraortnog prstena.

**Pacijenti i metode:** Između studenoga 2014. i siječnja 2016. godine, kod 37 bolesnika (52,5 ± 11,5 godina; 18,9% žene; EuroScore II od 2,8 % do 0,46 %) učinjen je popravak aortnog zalistka. Kod 6 bolesnika pronađena je izolirana malkoaptacija listića, dok je 31 bolesnik imao i dilataciju korjena aorte. Rekonstrukciju smo izvodili sa ekstraortnim Coroneo prstenom (27 (25-29)) te Gelweave graftom (28 (26-32)). Kod tri bolesnika u istom aktu učinjena je i rekonstrukcija mitralnog zalistka, kod dva rekonstrukcija trikuspidnog zalistka te aortokoronarno premoštenje, u jednom slučaju učinjena je zamjena luka aorte, a kod jednog bolesnika zamjena luka aorte uz postavljanje stenta u silaznu torakalnu aortu (E-vita stent graftom). Ultrazvukom srca procijenjena je funkcija aortnog zalistka preoperativno te u ranom postoperativnom razdoblju i tijekom praćenja.

**Rezultati:** U poslijeoperacijskom praćenju niti jedan bolesnik nije preminuo. Reoperacija nije bila potrebna u 92 % (3/37) slučajeva, dva bolesnika reoperirana su zbog aortne insuficijencije, a jedan bolesnik reoperiran je zbog tamponade. Došlo je do značajnog smanjenja end-dijastoličkog promjera lijeve klijetke postoperativno (60,3/53,3 mm), s daljnjom redukcijom u kasnijem praćenju. Tijekom postoperativnog praćenja nije ustanovljena značajna aortna insuficijencija (AR 0±0,5; ARO = 28; AR1+=7; AR2+=2).

**Zaključak:** Utvrdili smo da je ova tehnika odlična alternativa za liječenje bolesnika sa aortnom insuficijencijom. Došlo je do značajne redukcije end-dijastoličkog volumena lijeve klijetke uz oporavak funkcije srca rano postoperativno te tijekom praćenja, uz odličnu funkciju zalistka.

**Objective:** Aortic valve replacement (AVR) is still the most commonly used therapeutic option for patients suffering from AR. Aortic valve repair (AVRep) is an attractive alternative method, since it avoids the risks of prosthesis-related complications.<sup>1,2</sup> We would like to present our experience with the Yacoub root remodeling, valve sparing technique with the extraaortic expandable ring.

**Methods:** Between November 2014 and September 2016, a total of 37 patients (52.5±11.5 years; 18.9% female, EuroScore II of 2.8% to 0.46%) underwent AVRep, 6 due to isolated cusp malcoaptation and 31 with associated with aortic root dilatation. Reconstruction was done with the Coroneo Extraaortic Ring (27 (25-29)), and the Gelweave graft (28 (26-32)). Concomitant procedures included MVRep in 3 patients with TVRep in two of them, CABG in two patients and replacement of aortic arch and placement of EVITA stent graft in two patients. Echocardiography was used to determine AR severity grade preoperatively, during immediate post-operative period (within 7 days from operation) and at early follow-up.

**Results:** In postoperative follow-up no patients died. Freedom from reoperation was 92% (3/37) and there were 2 patients reoperated due to early postoperative regurgitation, and one because of early cardiac tamponade. A significant decrease in LV end-diastolic diameter was observed (LVEDD) (60.3/53.3 mm) with further decrease at early follow-up. At follow up none of the patients had major AR (0±0.5, ARO=28, AR1+=7, AR2+=2).

**Conclusions:** We have proved that AVRep is a good alternative for patients with aortic insufficiency and leads to LV reverse remodeling with comparable results in terms of LVEDD and LVEF immediately post-operatively and at early follow up.

### LITERATURE

1. Lansac E, Di Centa I, Vojacek J, Nijs J, Hlubocky J, Mecozzi G, et al. Valve sparing root replacement: the remodeling technique with external ring annuloplasty. *Ann Cardiothorac Surg.* 2013;2(1):17-23. DOI: <http://dx.doi.org/10.3978/j.issn.2225-319X.2013.01.15>
2. Lansac E, Di Centa I, Raoux F, Bulman-Fleming N, Ranga A, Abed A, et al. An expandable aortic ring for a physiological approach to conservative aortic valve surgery. *J Thorac Cardiovasc Surg.* 2009;138(3):718-24. DOI: <http://dx.doi.org/10.1016/j.jtcvs.2009.05.024>