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# Twenty-five Years Experience of Isolated BAV Repair

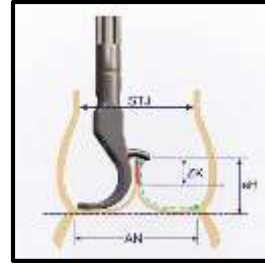
THE 37TH EACTS ANNUAL MEETING | 4 – 7 OCTOBER 2023



# Background / Study Objective

- **Commissural orientation (CO)-classification**

(De Kerchove et al.; EJCTS 2019)



- **Homburg**

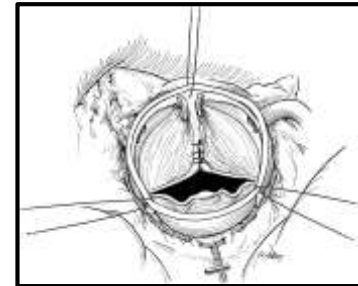
- **2004: Effective height** (eH: Schäfers et al., JTCVS 2006)

- **2009: Suture Annuloplasty** (Schneider et al., ATS 2016)

**Modification of CO** (Sinus plication; Schneider et al., ATS 2017)

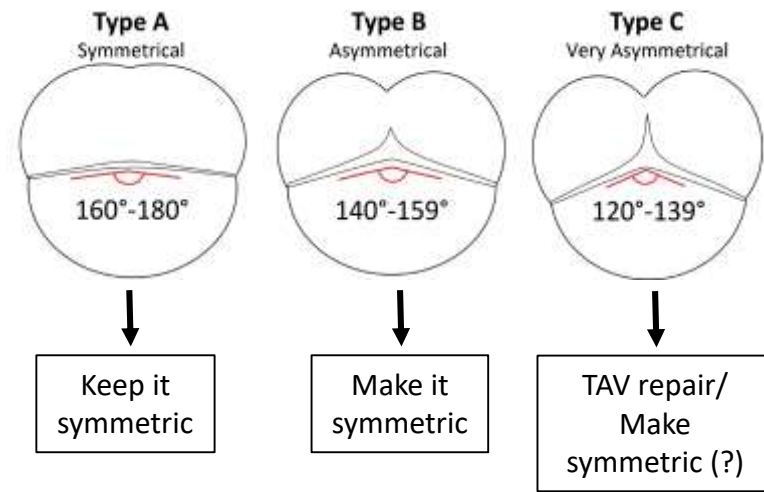


➔ **Long-term results of isolated BAV repair**  
**Effect of CO on stability?**



# Methods

- **Consecutive patients (1998-2022, N=604)**
- **No aortic root dilatation**
- **Study group (>2009, N=498)**
  - Type A: 50.4%
  - Type B: 39.1%
  - Type C: 10.5%
- **Control group (<2009, N=106)**
- **Follow up 97% complete**
  - Mean  $84 \pm 58$  months
  - Median 71 months
  - 4228 patient-years



(Froede et al.; EJCTS 2020)

# Patients

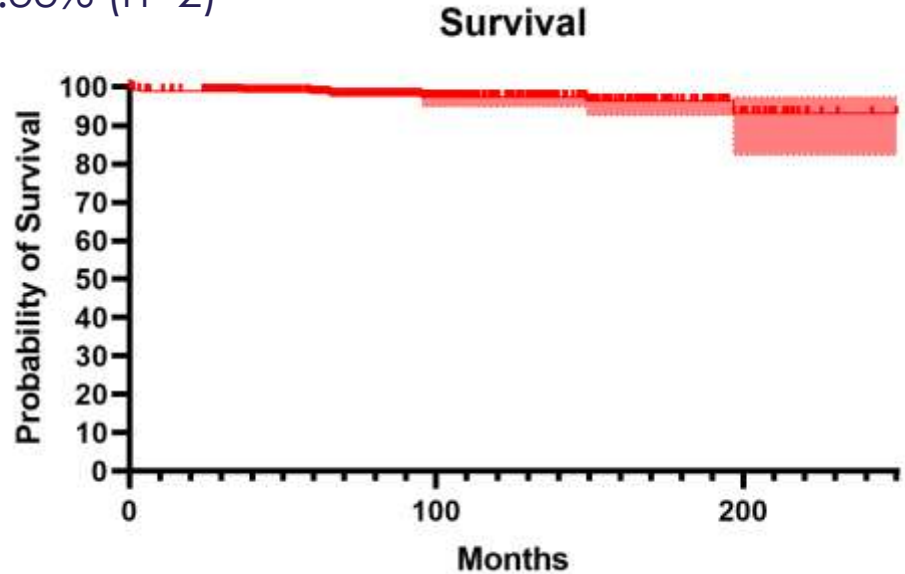
<b>Baseline characteristics</b>	
n	604
Male gender, n(%)	560 (92.7)
Age, years $\pm$ SD	41.7 $\pm$ 13.2
Previous cardiac surgery, n(%)	23 (3.8)
<b>AI preoperatively</b>	
III, n (%)	479 (79.3)
IV, n (%)	87 (14.4)
<b>Root geometry</b>	
Annular diameter, mm, mean $\pm$ SD	30.4 $\pm$ 3.8
Sinus diameter, mm, mean $\pm$ SD	36.2 $\pm$ 4.2
<b>Commissural orientation, n(%)</b>	
Type A	251 (41.6)
Type B	195 (32.3)
Type C	52 (8.6)
Unknown (<2009)	106 (17.5)

<b>Intraoperative procedures</b>	
<b>Fused cusp</b>	
Central plication	479 (79.3)
Triangular resection	101 (16.7)
Patch	51 (8.4)
<b>Annular support</b>	
Cabrol, n(%)	64 (10.6)
Annuloplasty, n (%)	448 (74.2)
<b>Sinus plication, n(%)</b>	218 (36.1)
<b>Concomitant procedure, n(%)</b>	64 (10.6)
<b>Perfusion time, mean <math>\pm</math> SD min</b>	47.8 $\pm$ 17
<b>Myocardial ischemia, mean <math>\pm</math> SD min</b>	30 $\pm$ 12

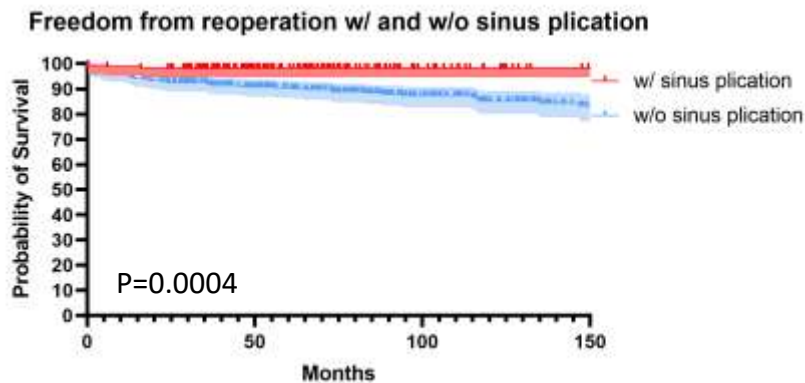
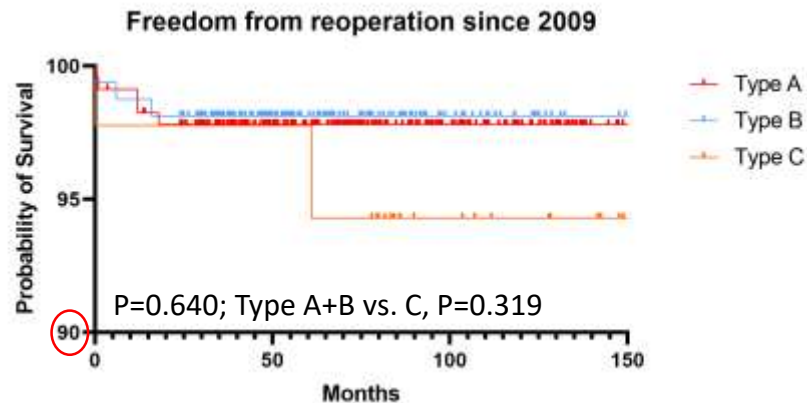
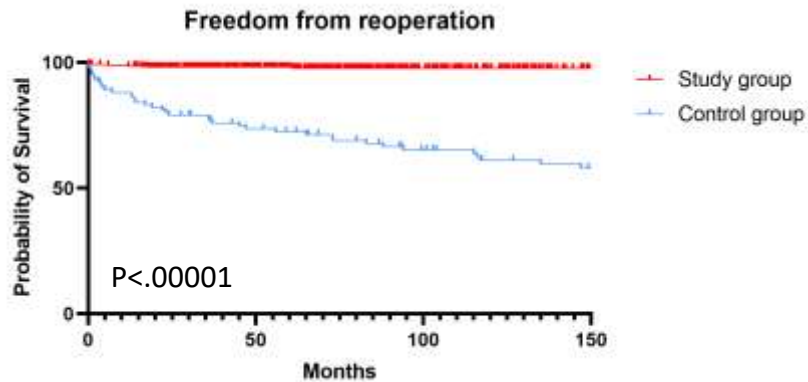


# Results: Survival

- **Reexploration for bleeding** 1.2% (n=7)
- **Hospital mortality (30 days)** 0.33% (n=2)
- **Late death** 1.8% (n=11)
- **Survival at 15 years**  $95 \pm 1\%$



# Results: Freedom from reoperation



# Conclusion

- **Isolated BAV repair leads to good survival and durability in all morphologic types if:**
- **suture annuloplasty**
- **Modification of CO by sinus plication**
- **Cusp repair guided by eH**

