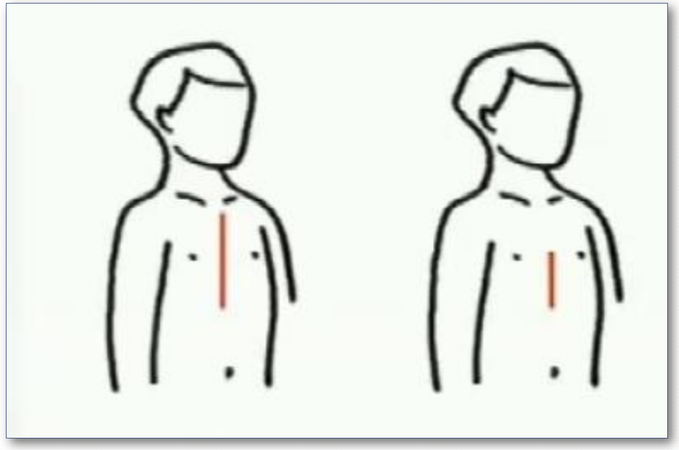
Eight Years Of Experience With The Use Of Lower Mini-sternotomy For Correction Of Ventricular Septal Defects In Pediatric Patients

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BACKGROUND: Lower mini-sternotomy represents a minimally invasive surgical technique that has been utilized for the repair of a wide variety of congenital heart defects with excellent surgical and cosmetic outcomes. The aim of our study is to report our results with lower mini-sternotomy for correction of ventricular septal defects (VSD) and compare them with a full median sternotomy approach.

METHODS: Between January 2013 and December 2020, 143 patients who underwent correction of VSD (76.2% less than 1 year) were divided into two groups: lower ministernotomy (LM) group (66.4%) and full sternotomy (FS) group (33.6%). The anaesthetic and surgical protocol was identical for both groups. Cardiopulmonary bypass was achieved directly in the two different approaches.

RESULTS: Procedures were performed successfully in all patients among the two groups and no in-hospital mortality or major in-hospital complications occurred. Perimembranous VSD was the commonest type of ventricular septal defect (81.8%). Median age was 5.7 months (range: 7 days- 11.5 years) in the LM group and 6 months (range: 1.5 months- 13.8 years) in the FS group (p=0.13). In this group, 44.8% patients were female. Median weight was 8 Kg (range: 4-49 Kg) in the LM group and 8 Kg (range:4- 24 Kg) in the FS group (p=0.98). No patient was reverted to standard median sternotomy in the LM group. Even, in the case of patients who required reoperation for residual VSD (3%), the same approach was used. There were no significant differences between two groups in operative times: cardiopulmonary bypass (93.47± 31.1 vs 93.5 ± 33.9 P= 0.99) and aortic cross-clamping (54.01 ± 22.1 vs 53.04 ± 23.8, P= 0.81). Surgical techniques were primary closure (11.2%), patch closure (86%) and perventricular device closure (hybrid procedure) (2.8%).



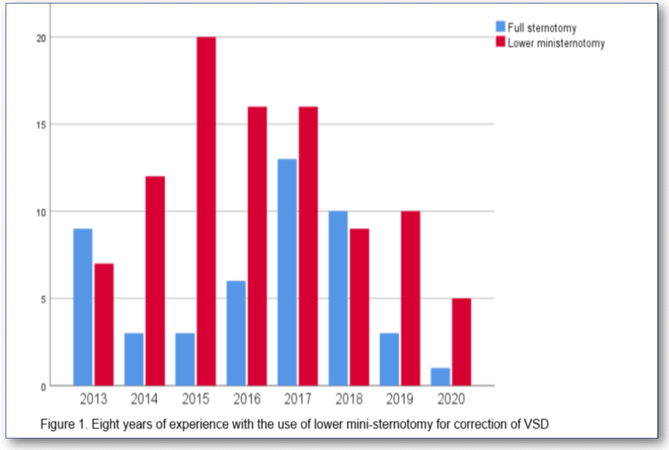


Figure 1. Eight years of experience with the use of lower mini-sternotomy for correction of VSD

CONCLUSIONS: At our centre, lower mini-sternotomy represents a safe alternative for the repair of VSD with good cosmetic results in paediatric populations. It also offers the same quality and efficacy with surgical times comparable to the conventional approach. The operative approach should be selected according to surgeon's technical expertise and what is best for specific patient profile.