

Prevention of the complete heart block complication after transcatheter perimembranous ventricular septal defect correction.

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Surgery is currently indicated for the majority of perimembranous ventricular septal defects (PVSDs), since transcatheter correction by Amplatz type devices was associated with an incidence of complete heart block (CHB) up to 20%. The justification for this choice will be examined by retrospective review of the results of other interventional devices including the buttoned device, the transcatheter patch and the PFM coil. The Buttoned Device has two disks buttoned together and is not interfering with the defect itself. Sixty cases were performed in children more than 2 years. Defect size was 3-6 mm, subaortic rim more than 2mm. No case of CHB was noticed. However, three cases were operated because of aortic insufficiency.

The transcatheter patch (TP) is a wireless, soft, absorbable device. Thirty cases were performed in children over 8 kg or older than 1 year with defect size 5-16 mm. Four malalignment defects (Fallot Tet) and 5 cases of Down Syndrome were included. There was no subaortic rim limitation. There was no CHB. There was one device embolization and no long term complications.

The PFM coil has been used in more than 300 defects in clinical trials. The subaortic rim was more than 3mm and patient age more than 2 years. There was no CHB. There were good long term results. In conclusion, there are several devices not causing CHB, avoiding compression of the conduction system. They have good acute and long term results. The wireless TP has wider application, although some metal devices can have good results in selective defects. Larger clinical trials are necessary prior to changing the current treatment choice.