

TRANSCATHETER CLOSURE OF ATRIAL SEPTAL DEFECTS IN CHILDREN AND ADOLESCENTS: SINGLE CENTER EXPERIENCE WITH THE OCCLUTECH FIGULLA SEPTAL OCCLUDER

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Introduction and purpose

Atrial septal defect (ASD) is one of the most frequently seen congenital heart diseases in childhood. Secundum type is the most common variant of Atrial septal defect. Atrial septal defect was closed with the transcatheter route for the first time by King and Milla in 1974 and in later years different devices were developed and used successfully in the ASD closure procedure.

Methods

A total of 70 patients applied with transcatheter closure with Occlutech Figulla Septal Occluder at our hospital between May 2012 and May 2017 were included in the study. The indications for transcatheter closure intervention were Qp/Qs ratio >1.5 and/or right ventricular overload and those who did not require surgical intervention for any other heart disease. Standard right heart catheterisation was applied to all patients.

Devices: Like the Amplatzer Septal Occluder, the Occlutech Figulla Septal Occluder device is a two disc system. Coverage of the Occlutech Figulla Septal Occluder device with titanium oxide gives the Occlutech Figulla Septal Occluder a specific yellow colour (Fig. 1). The Nnew Flex II Occlutech Figulla Septal Occluder device, the delivery system was changed to a bioprtome delivery system that allows full circular movement of the device and new device that contain less metal to provide beter felxibility and smaller delivery sheath than previous generation (Fig. 2).



Figure 1. Third generation device had a tiltable delivery system and a new ball shaped connection without hob of left atrial side.

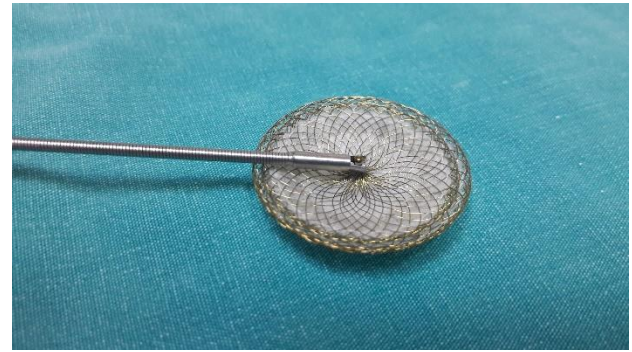


Figure 2. Connection of third generation flex device different than amplatzer septal occluder.

Results

Occlutech Figulla Septal Occluder was applied to 70 patients during the study period and the results were analysed in this study. The median age of the cases was 7 year (range; 4-16 year) and the median weight was 21 kg (range, 12 kg-75 kg). 69 patients (98.5%) underwent successful atrial septal defect closure with the Occlutech Figulla Septal Occluder. Femoral Access haematoma was developed in two patients, but resolved with conservative management. No cardiac rupture, device embolisation, thromboemboli or procedure-related deaths were observed.

Conclusion

- ❖ The results of this study showed that transcatheter atrial septal defect closure with Occlutech Figulla Septal Occluder is a safe and effective method.
- ❖ Although the total closure and complication rates with Occlutech Figulla Septal Occluder are similar to those of Amplatzer Septal Occluder, the procedure time is shorter and the radiation exposure is less.
- ❖ The soft structure of the Occlutech Figulla Septal Occluder device and the property of flexible rotation provide ease of placement in various atrial septal anomalies and reduce the need for manoeuvre and the risk of trauma.
- ❖ The disadvantages of Occlutech Figulla Septal Occluder are the need for a larger delivery sheath and that the options range of devices is as fewer.