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Short Communication

Complication Rates of Percutaneous Pulmonary Valvuloplasty

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DESCRIPTION

A condition known as Pulmonary Valve Stenosis (PS) affects the heart's pulmonary valve, obstructing blood flow from the right ventricle of the heart. People with more severe types of PS are living into adulthood despite being identified and treated most frequently in the juvenile population, and they need continuing monitoring and cardiovascular care. According to reports, there are 0.6 to 0.8 occurrences of valvular pulmonary stenosis for every 1000 live births. About 50% of all babies born with congenital heart disease have it when it is accompanied by another congenital cardiac problem. PS may be caused by a single valvular (90%), subvalvular, or peripheral blockage or it may co-exist with other congenital heart conditions [1].

Valvular pulmonic stenosis

Approximately 10% of all congenital heart disease is isolated valvular PS. Typically, the three valve leaflets are thin and pliable, the valve commissures are partially fused, and the result is a conical or dome-shaped structure with a restricted central orifice. The "jet-effect" hemodynamics may cause poststenotic pulmonary artery dilatation, which is a reliable indicator of the effectiveness of interventional treatment. If there is a concurrent patent foramen ovale, atrial septal defect, or ventricular septal defect, cyanosis can result from right-to-left shunting in patients with severe PS and poor right ventricular chamber compliance.

Subvalvular pulmonic stenosis

When a normal pulmonic valve is present, subvalvular PS manifests as a constriction of the infundibular or subinfundibular area. This syndrome can also be linked to a Ventricular Septal Defect (VSD) and is found in people with tetralogy of Fallot [2].

Peripheral pulmonary stenosis

The main pulmonary artery, its bifurcation, or its farther-flung branches can all become blocked as a result of Peripheral Pulmonary Stenosis (PPS). PPS can happen at a single level, although numerous blockage sites are more typical. 20% of patients with tetralogy of Fallot have concomitant PPS, which may also be present with other congenital heart defects such valvular PS, Atrial Septal Defect (ASD), Ventricular Septal Defect (VSD), or Patent Ductus Arteriosus (PDA). A systolic murmur in young children is frequently caused by functional or physiological PPS. Both premature and full-term infants can experience it; with time, as the pulmonary artery expands, the murmur typically goes away within a few months [3-5].

Mild-to-moderately severe Pulmonic Stenosis (PS) often has no symptoms in children or adults. People with severe PS may feel exhausted and exertional dyspnea. Patients may appear with exertional angina, syncope, or abrupt death in exceedingly uncommon circumstances. Right heart failure is characterised by peripheral edoema in addition to other common symptoms. With a large right-to-left shunt caused by a patent foramen ovale, atrial septal defect, or ventricular septal defect, cyanosis is observed. Surgery was used to treat this problem up until 1982, when Kan et al. launched the percutaneous Balloon Pulmonary Valvuloplasty (BVP) procedure. Since then, most cardiac facilities in industrialized nations have adopted BVP as the standard therapy for moderate to severe pulmonary stenosis. Some advantages over open surgical treatment include its minimum invasiveness and lack of sternotomy.

CONCLUSION

The pulmonary valve re-stenosis, pulmonary artery wall rupture, and post-interventional high grade valve insufficiency are possible drawbacks of this procedure. Numerous researchers have indicated that the method has been used successfully on adults. When comparing balloon pulmonic valvuloplasty in adults and children, there are two key differences. The choice of a balloon size that is significantly larger than the annulus of the pulmonic valve does not appear to be as important in adults as it is in youngsters. The main objective was to describe the success and complication rates of percutaneous pulmonary valvuloplasty performed at our clinic over an eleven-year period in both children and adults.

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