

a crescentic aperture through which two fingers can be passed with ease, existing. This opening is bounded above by the thin concave edge of the valvula foraminis ovalis; below, it impinges directly on the interventricular septum, its lower border being formed on the side of the left ventricle by projecting cushions sent upward from the base of the two halves into which the anterior mitral segment is divided. The right auricle is much enlarged, the fossa ovalis is increased in size and presents irregular thickening, but is nowhere perforated; the annulus ovalis is absent below opposite to the defect, and does not curve forward to meet the Eustachian valve. The sinus of the right ventricle is of about normal size, but its conus arteriosus is much enlarged and has very thick walls; it is quite cut off from the sinus by the thickened and very strong infundibular cusp of the tricuspid valve, which stretches obliquely across it. The anterior chordæ of this cusp arise from the greatly hypertrophied anterior papillary muscle, while its posterior ones run horizontally back to a heavy band of muscle, which passes from the posterior (septal) wall of the ventricle to the lower margin of the defect in the interauricular septum, a gap 15 mm. long existing at this point between the septal and infundibular tricuspid cusps.

The anterior segment of the mitral valve is thickened and sclerotic, and is divided into two halves by a cleavage along its middle; each half runs upward in an oblique direction from its papillary muscle to the lower margin of the defect, where the anterior half overlaps the posterior, a triangular interval existing between them below and giving the appearance at first sight of an additional cusp. *This deformity of the anterior mitral segment is present in the majority of cases of defect of the lower part of the interauricular septum (persistent ostium primum), and was seen in five of Rokitsansky's six cases.*

The left auricle is dilated and hypertrophied; the left ventricle is of about normal size.

The pulmonary artery is about one-third larger than the aorta.

DISCUSSION.

Defects at the *upper* part of the septum, *above* the fossa ovalis, as in the specimen which forms the subject of this paper, are exceedingly rare. Rokitsansky, it is true, describes nine cases of persistent *ostium secundum* in his great work on defects of the Cardiac Septa (1875¹), but only six others are to be found in the literature after an extended search. These are by Wagstaffe (1868²) (two cases), Chiari (1880³), Hepburn (1887⁴), Greenfield (1890⁵), Ingalls (1907⁶), and Ellis (1906⁷). Our specimen is unique among those recorded in (a) the age of the patient, which is the highest attained, and (b) the association of a primary chronic pulmonary endocarditis from overwork with extreme calcareous change.

The following analysis of the recorded cases of defect at the upper part of the interauricular septum is of interest in considering both the pathogenesis and the clinical significance of the abnormalities in the present case.

Wagstaffe.

CASE 1.—A child, æt. 6. In good health until the onset of scarlet fever ten weeks before death. A circular opening, 6 lines in diameter, seen best on the side of the right auricle, lay in the upper part of the septum atriorum