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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Aortic root remodelling with aortic annuloplasty and aortic arch replacement one year after surgical treatment of acute aortic dissection

Remodeling opuszki aorty z plastyką pierścienia aortalnego i wymianą łuku aorty rok po operacji ostrego rozwarstwienia aorty

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We present a case of a 65-year-old male admitted to our clinic due to acute aortic dissection Stanford type A. On admission, the patient was in good general condition, blood pressure 85/60 mm Hg, sinus rhythm 67 bpm, with no electrocardiographic changes, and no chest pain. Transthoracic echocardiography revealed aortic dissection, an intimal tear just above the tricuspid aortic valve with no organic changes of the valve and severe regurgitation. The patient was operated with use of cardiopulmonary bypass, in moderate hypothermia. A supracoronary aortic graft was implanted. On the seventh postoperative day, the patient was discharged. One year later the patient was admitted again due to a false aneurysm at the region of proximal anastomosis of supracoronary graft and persistent dissection of aortic arch and descending aorta, with increasing diameter of aortic arch (Fig. 1). The patient was stable, but the lumen of false aneurysm increased in last six months and the risk of right coronary artery occlusion was present. Surgery was planned. The patient was reoperated with cardiopulmonary bypass, in moderate hypothermia at 26 degrees centigrade. The supracoronary aortic graft was cannulated directly, and a two-stage atrial cannula was used. The aorta was cross-clamped at the graft level, and the graft was opened and cold blood cardioplegic solution was administered directly to the coronary ostia. The proximal part of aortic graft was excised with the native aortic root with careful preparation of coronary ostia. An artificial ring was made from a Teflon strip using 29-mm sizer, then the ring was sutured to the annulus from outside with six 4-0 polypropylene sutures, three of them beneath commissures of the valve and three beneath nadirs of aortic cusps. The sinuses were excised leaving approximately 5 mm of aortic wall. A 28-mm Dacron vascular graft was tailored to create three symmetric sinuses and sutured to the aortic wall with three 4-0 polypropylene continuous sutures beginning in the nadir of sinus. Then the Dacron graft was tailored about 2 cm above the commissures, and the aortic valve was carefully assessed and repaired with use of the concept of effective height of aortic cusps using dedicated callipers. Next, the cardiopulmonary bypass was stopped, the aortic arch and branches were dissected, selective brain perfusion was instituted, and the aortic arch was replaced with the branched 28-mm Dacron graft. Extracorporeal circulation was then reinstituted, two Dacron grafts were sutured, and the procedure was finished. Intraoperative transoesophageal echocardiography showed a trivial central aortic regurgitation jet, like the transthoracic echocardiography on the fifth postoperative day (Fig. 2). Postoperative angio-computed tomography scan showed excellent postoperative effect (Fig. 3). On the tenth postoperative day the patient was discharged.

Figure 1. Preoperative angio-computed tomography three-dimensional reconstruction

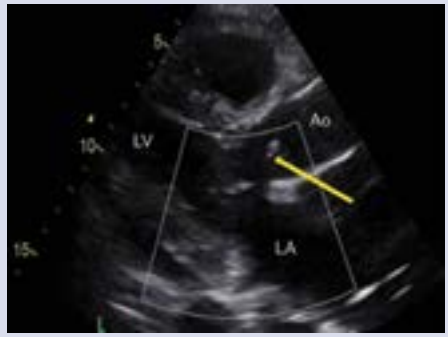

Figure 2. Trivial aortic regurgitation — transthoracic echocardiography on the fifth postoperative day; Ao — aorta; LA — left atrium; LV — left ventricle

Figure 3. Postoperative angio-computed tomography three-dimensional reconstruction

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