INTRODUCTION:
The standard surgical management of patients with transposition of the great arteries (TGA) and left ventricular outflow obstruction (LVOTO) has been the Rastelli operation. More recently, truncus block rotation (TBR), by cutting out aortic and pulmonary root in one block and by rotating it 180 degrees, has been introduced as a new option for anatomical repair.

Operative technique:
The aorta is divided well above the coronary ostia. The latter are excised and mobilized as in an arterial switch procedure. The pulmonary artery is divided at the same height and the pulmonary valve is inspected and sized with Hegar dilators. A transverse incision is made into the subaortic conus (A), and the truncus arteriosus including the subarterial part of the conus septum is excised en bloc. The residual part of the conus septum is transected (B). The papillary muscle of the conus must be spared. The VSD is closed by a U-formed pericardial patch, thus enlarging the LVOT. The truncus block is rotated by 180° and reimplanted, so the aortic root is brought over the LVOT, and the pulmonary root over the RVOT (C). The coronaries are reconnected to the aorta, and a

Example of ECG strips:
(first line: ECG before surgery, second line: ECG directly after surgery, third line: follow-up ECG)

Goal:
To assess the effects of TBR on the conduction system.

Methods:
16 consecutive patients with TGA and LVOTO: median age: 244 days (4-2360 days). Retrospective analysis of pre- and postoperative ECGs (median 12 days (3-27 days) postoperatively) for alterations in QRS duration, QRS-pattern, repolarisation and QTc. The median follow up time was 585 days (11-2572 days).

Results:
No major alterations or arrhythmias were observed except one complete AV-block. One patient had a transient atrial rhythm right after surgery, which changed to sinus rhythm during the follow-up period. All patients without typical bundle branch block pattern had a median QRS duration of 65 ms (54-112 ms) before surgery, 62 ms (54-122 ms) after surgery and 84 ms (66-128 ms) at the last follow up visit. None of the patients had a typical BBB pattern before surgery, but 8/16 patients had a right BBB after surgery, which persisted during follow up. This compares well to a comparable Rastelli cohort, where a right BBB prevalence of 77% was reported (Brown et. al.; Ann Thorac Surg 2011;91:188–949). In the BBB group the median QRS duration was 100 ms right after surgery and 84 ms at the last visit. There were no specific ST changes which persisted in the follow-up.

CONCLUSION: Our data suggests, that negative effects on the conduction system and arrhythmias do not play a major role in TBR. Their prevalence seems to be comparable if not less than in patients after a Rastelli procedure. More patients and longer follow-up are needed to confirm the results of this study.