26056 - AORTIC KNOB; CAN BE A RELIABLE RADIOGRAPHIC LANDMARK FOR PLACEMENT OF INTRA-AORTIC BALLOON PUMP TIP?

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Background; The intra-aortic balloon pump (IABP) should be placed 1-2 cm below the origin of the left subclavian artery (LSCA) and above the renal artery branches. IABP placement is critical for proper operation and avoidance of arterial tributary obstruction. It has been proposed that this position must be verified by chest x-ray, the tip of the balloon should be just below the level of the aortic knob, and should be in a straight line curving to the right. We aimed to evaluate the usefulness of aortic knob as a radiographic landmark for proper positioning of IABP tip using CT angio-3D aorta.

Methods; We studied 100 adult patients undergoing off pump coronary artery bypass surgery. We measured the longitudinal distance from the origin of LSCA to the aortic knob (LSCA-Ao) in the coronary section of CT angio-3D aorta that permit best view of LSCA and aortic knob, using the Picture Archiving and Communicating System. LSCA-Ao was measured zero when the LSCA was branched at the aortic knob or distal to the aortic knob.

Results; The distance from the LSCA to the aortic knob is as below. The LSCA-Ao is 0 in 7 patients (7%); $0 < \text{LSCA-Ao} < 1$ cm in 16 patients (16%); $1 < \text{LSCA-Ao} < 2$ cm in 58 patients (58%), and $\text{LSCA-Ao} > 2$ cm in 19 patients (19%).

Conclusions; Aortic knob is a proper radiographic landmark for IABP placement in 74% patients. Using the aortic knob as a radiographic landmark for IABP placement, there may be a chance to obstruct the LSCA in 7% patients. The aortic knob may not be a reliable radiographic landmark for positioning of the IABP tip.