Initiating cardiopulmonary bypass Arterial cannula

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Conventionally , a perfusion cannula is inserted into the ascend ing aorta. Two purse-string sutures are usually placed in the selected area for cannulation after manual or epiaortic scan inspection to ensure that it is clear from severe calcifica atherosclerotic lesions that can prevent safe cannulation or lead to increased risk of postoperative complications such as stroke. The aortic cannula is checked for size and inserted into the aorta between the purse-string sutures and secured by tight ening them. Air is excluded and the cannula connected to the bypass circuit. Alternatively , when it is either inadvisable (aortic dissection), impractical (aortic root surgery) or impossible (severe adhesions or porcelain [calcified] aorta) to cannulate the aorta, alternative cannulation sites can be used, such as the femoral or the axillary artery . The axillary approach has recently been gaining more popularity as it provides more physiological blood flow in the aorta (antegrade) than femoral cannulation, in which blood flow is opposite to normal physi ological conditions (retrograde), and can be utilised to provide selective cerebral perfusion in complex aortic operations. Axillary cannulation has the theoretical advantage of r educing thromboembolic events compared with femoral cannulation. This is related to the di ff erences in the direction of blood flow as flow in femoral cannulation is from the descending aorta to the heart, which means increasing the chances of mobilising calcified plaques from the aorta to the head and neck vessels.

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