

ARTERIAL LINE PLACEMENT

Arterial line placement is a common procedure for management of critically ill patients in various settings. It involves a needle stick into an artery and then leaving an indwelling plastic "cannula" in place. It is used to measure blood pressure quickly and more accurately and for obtaining blood samples for laboratory analysis. Intra-arterial blood pressure management allows for the rapid recognition of changes in blood pressure vital for patients on continuous infusions of vasoactive drugs. Intra-arterial blood pressure measurement is more accurate than blood pressure obtained by noninvasive means, especially in the critically ill. Arterial cannulation also allows for repeated arterial blood gas samples to be drawn without injury to the patient.

Overall, arterial line placement is considered a safe procedure with a rate of major complications less than 1%. Arterial lines can be placed in multiple arteries, including the radial, ulnar, brachial, axillary, dorsalis pedis, posterior tibial, and femoral. The most common site of cannulation is the radial artery, followed by the femoral artery. The radial artery is the site of choice by many due to its ease of cannulation, consistent anatomy, and low rate of complications. The femoral artery has the advantage of having a lower risk of thrombosis, but overall a similar rate of complications.

In determining need and location of arterial line placement, one must consider the risk and benefits of the procedure for the patient. The arterial cannula will be removed once the disease process improves and it is no longer needed.