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TITLE

Collateral arterial supply of placenta accreta spectrum disorders and considerations in prophylactic balloon catheter placement

BACKGROUND

Internal iliac artery (IIA) balloon catheters have been commonly inserted to decrease the risk of high-volume post-partum haemorrhage in placenta accreta spectrum disorder, however, the technique has shown mixed success in clinical trials. Conversely, placement of an infra-renal aortic balloon has shown more consistent efficacy in recent studies. A possible reason for this is collateral arterial supply to the placenta from external iliac artery branches. The purpose of this study was to estimate the prevalence of collateral arterial supply in placenta accreta spectrum.

METHODS

Single-centre retrospective review of angiography images acquired during prophylactic IIA balloon catheter insertion by interventional radiologists during a 7 year period to identify collateral arterial supply.

RESULT

Sixty-two women with placenta accreta spectrum and prophylactic IIA balloon insertion were identified. Digital subtraction angiography was performed in 32 (52%) of cases, and 20 (62%) of these showed collateral blood supply from branches of one or both external iliac arteries, namely the round ligament artery.

CONCLUSIONS

A high proportion (perhaps 62%) of placenta accreta spectrum cases have arterial blood supply from branches of the external iliac artery, which may provide rationale for the discrepancy in efficacy seen between IIA and infrarenal aortic sites of balloon catheter placement.

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