

External Aortic Compression in postpartum haemorrhage: evaluating the feasibility of implementation in Wales

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Introduction

- External Aortic Compression (EXAC) is a technique whereby pressure is applied to the aorta to compress the vessel above the level of the umbilicus against the spine and reduce distal blood flow (image 1)
- EXAC is included in World Health Organisation recommendations for the prevention and treatment of PPH and the FIGO recommendations on the management of PPH 2022 [1],[2]
- Efficacy of the EXAC technique at reducing distal blood flow in healthy volunteers has been demonstrated [3],[4]
- Midwifery experience has been positive [5] in Scandinavian settings, where EXAC is integrated into standard PPH care
- Simple, low cost intervention which may reduce overall bleed volume in PPH [6] although evidence describing the impact of EXAC in PPH is limited to small studies [7]
- EXAC is not included in current UK guidance, and its introduction would require training and clarity on how it becomes part of PPH management

Aim

To assess the acceptability and feasibility of introducing EXAC into regional PPH management

Method

- Following local service evaluation registration, a video and hands on simulator were used to introduce EXAC to members of the multiprofessional maternity team, at local and regional meetings in 2024
 - Clinicians were then asked to complete a survey exploring their perceptions of the technique including potential benefits to patients and where it might be integrated in to PPH care, as well as any clinical concerns and perceived barriers to its implementation
- Following on from specific themes raised, local expert advice from specialists in upper gastro-intestinal (UGI) and vascular surgery was sought.
- Responses were analysed using univariate statistics for each question and qualitative feedback shown.

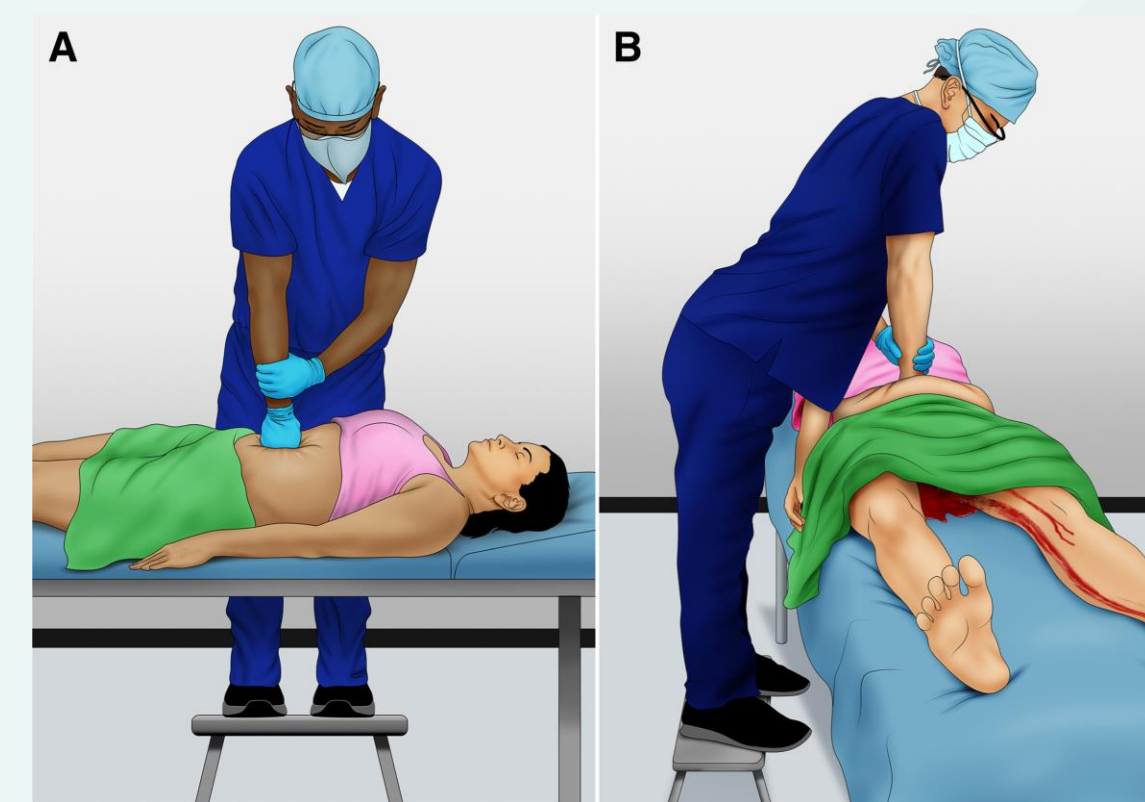


Image 1. Demonstration of EXAC technique [6]

Results

- A total of 33 questionnaires were completed (13 anaesthetists, 13 obstetricians, 10 midwives and theatre staff)
- Expert advice was obtained from 10 vascular and UGI specialists. A summary of the results and responses is shown

	Maternity staff (n=33)	Vascular and UGI specialists (n=10)
Had you heard of EXAC prior to this session?	12/36 (34%)	4/10 (40%)
Have you had any experience performing EXAC prior to this session?	0/36 (0%)	0/10 (0%)

Figure 1. Table showing numbers of yes responses

	Maternity staff (n=33)	Vascular and UGI specialists (n=10)
What would you perceive as potential benefits of EXAC in PPH?	Simple Not much training needed When all else fails! Temporary reduction of blood loss Allow better visibility Minimising blood loss	Damage control measure Reducing total blood loss Reducing need for transfusion
What context could you imagine EXAC being used in PPH?	Community setting Last ditch attempt at controlling bleeding Atonic bleeding Transfer to theatre Major PPH Whilst suturing	Transfer to theatre Major haemorrhage Waiting for ambulance
Do you have any concerns about using EXAC in PPH?	Ischaemia Incorrect performance Pain Reduced venous return Obesity Damage to other structures	No - 7/10 (70%) Delayed definitive treatment Efficacy

Figure 2. Table showing common themes from survey responses

Discussion

- This evaluation suggests that although EXAC is not taught in local maternity training, clinicians considered it a relatively simple technique that might be a useful temporising measure during PPH
- Specialist surgeons did not share the specific concerns highlighted by the maternity team and were reassuring regarding potential concerns of using EXAC
- Opportunities for integrating EXAC into PPH management include intraoperative PPH care when regional and/or general anaesthesia is provided to achieve patient comfort during the procedure
- Further monitoring of the clinician and patient experience and impact on maternal outcome is planned.

Conclusion

External Aortic Compression is not a new technique and it's role in PPH is recognised by major guidelines however, it is not well investigated in the literature and is not widely utilised, or included in guidance in the UK

This service evaluation suggests that the MDT in South Wales feels that it may have a positive role to play in PPH care and opens opportunities for further investigation of the technique in clinical practice

Acknowledgments

- Many thanks to our Norwegian colleagues at ExAC for providing support and the training device free of charge

References

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