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Case Report

Peripheral limb ischemia- A rare side effect of ergometrine

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ABSTRACT

Introduction: Drug induced vasculitis is an inflammation of blood vessels caused by use of various drugs like ergometrine, inotropes. The purpose of this review is to highlight the importance of ergotism as a cause of peripheral vascular ischemia and analyze the changes associated with this condition.

Case Report: Mrs. XX, 21 year old, P2L1 presented with history of normal delivery in PHC eight days back with complaints of breathlessness, fever and bluish grey discoloration of both lower extremities since her delivery. There was history of severe postpartum hemorrhage post delivery in the PHC and was medically managed with ergometrine and other oxytocics. On examination, patient had pallor, temperature and tachycardia. Dorsalis pedis pulsation was palpable in both lower limbs. Thorough workup was done which revealed hemoglobin 6.9 gm% and high total count. Doppler study of both lower limbs and ECHO were normal. Patient was managed conservatively after which she improved symptomatically but there was no improvement in the line of demarcation in both lower limbs. Due to financial constraints, patient decided to shift to government setup for further management.

Discussion and Conclusion: Ergometrine is recommended by ACOG and RCOG for use in the medical management of atonic postpartum hemorrhage after oxytocics. Ergometrine has a vasoconstrictive effect which causes progressive vasospasm leading to peripheral ischemia and gangrene which may lead to amputation of the limbs. Hence, management of postpartum hemorrhage with minimum effective dose of ergometrine should be emphasized and use of other oxytocics should be encouraged to prevent such major complications.

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1. Introduction

The Ergot analogues ergometrine is recommended by the Royal College of Obstetricians and Gynaecologists as a second-line pharmaceutical agent for the treatment of uterine atony in cases of postpartum haemorrhage after first-line oxytocin administration¹.

We have described a case of a woman who developed peripheral limb ischemia following administration of the ergot analogue ergometrine for control of postpartum

bleeding. Peripheral limb ischemia is a rare acute or chronic complication of the administration of ergometrine and its analogues in obstetric patients in the absence of pre existing vascular disorders. It is important to recognize the rare side effect of ergometrine administration.

2. Case Presentation

Mrs. 21 years old, P2L1 presented with breathlessness, fever, and discoloration of all digits of both lower limbs associated with tingling and numbness and generalised weakness since 8 days. Patient had a normal vaginal delivery

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8 days back at a PHC and delivered a live term baby. She had post-partum haemorrhage which was medically managed with ergometrine. On examination patient had pallor, temperature and tachycardia. Dorsalis pedis pulsation was palpable in both lower limbs, blood pressure 90/60 mm of Hg, respiratory rate 28 breaths per minute. Bilateral lower limb toes showed gangrene till metatarsophalangeal joints with no proper line of demarcation (Figures 1 and 2). There were no gangrenous changes in upper limbs and nose. There was no past history of cold or heat intolerance, smoking or collagen vascular disease.



Fig. 1: Shows gangrene of bilateral lower limb

The laboratory findings showed severe anaemia (haemoglobin 6.9 gm %) and septicaemia with total count 23,000/cumm and raised C-reactive protein (CRP). Radiological intervention showed normal 2D-echo and arterial doppler of both lower limbs. Gynecologist and Physician examined the case and final diagnosis was made as gangrene of lower limb gangrene due to ergometrine with septicaemia. No other possible aetiology could be derived from clinical and laboratory aids. Therapy was started in the form of injections lower molecular weight heparin, antiplatelet, broad spectrum antibiotics, steroids and anti inflammatory tablets.

Patient was managed conservatively after which she improved symptomatically but there was no improvement in the line of demarcation in both lower limbs. Due to financial



Fig. 2: Shows gangrene of bilateral lower limb

constraints, patient decided to shift to government setup for further management.

3. Discussion

Ergot alkaloids are well-known preparations which act as partial antagonist at alpha receptors and direct vasoconstrictive action on dilated arterioles. They induce contraction of uterine musculature and give a central stimulation of dopamine receptors. Ergot alkaloids used in obstetrics and gynaecology are ergometrine (ergonovin), methylergometrine (methergine) and bromocriptine.

Methylergometrine has a pronounced action in small dose with fast action to decrease postpartum haemorrhage by tetanic contraction of myometrium. Ergometrine may be administered IV or IM. The IV route has an immediate onset of uterine contraction and to be readministered every 2-4 hours as necessary, slowly over a period of 1 minute, while IM administration has onset of uterine contractions within 2-5 minutes and is less likely to precipitate hypertension.

Ergotamine is contraindicated in eclampsia or pre eclampsia and vascular diseases or heart diseases, impaired renal and hepatic function. They metabolised in liver by cytochrome P450 3A4 enzyme. Other medications like antifungal drugs (azole derivative), protease inhibitors and floxitine like antidepressant prolong the metabolism of ergotamine, causing serious side effects like stroke, gangrene and death etc.¹ Adverse reaction after ergometrine administration includes – headache, abdominal pain, palpitations, tingling numbness and muscle cramps.

Most common causes of peripheral gangrene include frostbite, ergotism, vasospasm and certain rheumatological / immunological disorders.² Usually microvascular thromboses cause symmetrical peripheral gangrene and in most of these cases, arteries are pathologically more involved rather than veins.³ But in this case, the peripheral gangrene is due to vasculitis that is induced by a drug and

that too involving venules rather than arteries.

Blood vessel wall changes include thickening, narrowing and scarring which cause near obliteration of the lumen, thus impeding blood supply to the respective tissue. This can result in that particular organ or tissue death.² Drugs like ergometrine (methergine used for PPH) can cause all these vessel wall changes resulting in significant peripheral ischemia and eventual gangrene.

Mahanta B N⁴ reported similar case of postpartum gangrene of all four limbs following injection of ergometrine.

4. Conclusions

Administration of ergometrine is crucial for post-partum haemorrhage management but close monitoring should be done for early diagnosis of adverse effects. This case highlights the continued importance of recognizing the rare occurrence of peripheral limb ischemia induced by ergometrine.

5. Source of Funding

None.

6. Conflict of Interest

The authors declare no conflict of interest.

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