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Short Communication

Rare adverse effect of adrenaline in vaginal hysterectomy

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Intraoperative blood loss is of prime concern to both surgeons and anaesthetists. In vaginal surgery the popular method of reducing blood loss has been local infiltration of solution containing adrenaline. Infiltration of adrenaline has been used in vaginal hysterectomy to minimize bleeding since decades. Local adrenaline infiltration often causes beta 1 adrenoreceptor mediated tachycardia/ arrhythmia for a short period of time, which mostly resolves on its own but may sometime cause life threatening tachyarrhythmias like atrial fibrillation.

A 47-year-old woman presented to gynecology department with 2-year history of genital prolapse. She was para 4 and had no preexisting chronic illness. She was advised for vaginal hysterectomy with anterior colporrhaphy and posterior colpoperineorrhaphy. All investigations including ECG were normal.

She was given combined spinal epidural anesthesia with injection bupivacaine 0.5% heavy 3.4 ml at L3-L4 spinal level with 18G epidural needle and 25G spinal needle. The 20 G epidural catheter was inserted at the same level by needle through needle technique and fixed at 10 cm. Vaginal hysterectomy was performed and uterus was delivered out. This was followed by repair of the cystocele. Around 20 ml of Adrenaline (1:200000) dilution was infiltrated in the sub mucosal layer of the cystocele after negative aspiration. After 5 minutes of adrenaline infiltration, patient became hemodynamically unstable with

irregularly irregular pulse varying between 90 – 140 per minute and blood pressure fluctuating between 120-90/90-40 mm Hg. She was maintaining 100% saturation on room air and bilateral air entry was equal and clear. In view of tachyarrhythmias she was given injection lignocaine 60 mg and esmolol 30 mg IV and repeated after 10 minutes. The surgery was completed without further administration of adrenaline. However, she had persistent tachyarrhythmias (HR-140/min) in the post-operative period. Thereafter she was shifted to coronary care unit (CCU). ECG was done and she was diagnosed to have atrial fibrillation with fast ventricular rate. Echocardiography revealed normal findings. She was given loading dose of injection amiodarone 150 mg over 30 min followed by infusion of 1mg/min for 4 hours followed by 400 mg per orally daily. Anticoagulant therapy with dabigatran 110 mg twice daily was started after 24 hours. She was shifted out of CCU after 48 hours and was discharged on 7th postoperative day on oral amiodarone and dabigatran. Follow up ECG at 2 weeks showed normal sinus rhythm.

To achieve better hemostasis and dissection in vaginal hysterectomy, various vasoconstrictors like adrenaline, terlipressin and lignocaine have been used.¹ Surveys conducted in the United Kingdom also suggest that 86% of gynecologist prefer the use of adrenaline infiltration before vaginal hysterectomy.²

There are no specific guidelines to standardize dilutions of adrenaline. Schroeder HG et al³ concluded that adrenaline strengths of 1:120,000 and 1:240,000

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significantly reduces intra-operative blood loss, but there was no statistical difference in the mean blood loss in the two groups. It is found that subcutaneous infiltration using 1:100,000 solution causes significant tachycardia than the 1:200,000 solution, and the 1:500,000 solution is virtually free of any side-effects with a significant decrease in blood loss.⁴

Para cervical infiltration may however cause local ischemia with infection and its use is also associated with hypertension and tachyarrhythmias which could lead to catastrophe in elderly patients.⁵ So the benefits offered by adrenaline, comes with some side effects which includes sudden rise in blood pressure and transient arrhythmias. These side effects are often short lived and resolve on their own without the need of any intervention.

We conclude that adrenaline should only be used in the lowest possible dilution and a judicious selection of cases needs to be done as myocardial arrhythmias produced by adrenaline is directly proportional to the total dose injected.⁶

1. Conflict of Interest

None.

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