

How Safe is Gemeprost? A Case Report of a Middle-aged Female Developing Acute Myocardial Infarction after Insertion of Gemeprost Vaginal Pessary and a Review of its Usage

Dear Editor,

Introduction

Gemeprost is a prostaglandin E1 analogue and has been in use in our institutions to induce uterine contraction for termination of pregnancy and also for cervical dilatation for dilatation and curettage. We report the case of a 63-year-old female presenting for curettage of the uterus who developed acute myocardial infarction 10 minutes after vaginal insertion of gemeprost. She was given sublingual nitroglycerin followed by intravenous morphine for analgesia. The retrosternal chest pain improved rapidly and the patient was sent to the intensive care ward immediately. Intravenous infusion of nitroglycerin was started immediately and blood was taken for assessment of cardiac enzymes. The patient was subsequently sent to another institution with coronary care unit for further management. The patient recovered with minimal haemodynamic changes. There was no further elevation of cardiac enzymes at the Cardiac Critical Care (CCU) and no further electrocardiogram (ECG) changes. The patient, however, refused further intervention and hence was not able to confirm that this was strictly a coronary vasospasm event. Gemeprost is a drug to be used with caution in patients with risk factors of ischaemic heart disease.

Case History

A 63-year-old female with a history of hypertension on atenolol presented with menorrhagia and was referred to the institution for further investigation. She had no symptoms of chest discomfort on exertion and no other risk factors of ischaemic heart disease. Preoperative 12-lead ECG and chest X-ray were essentially normal. There was no symptom of anaemia with a preoperative haemoglobin level of 12 g/dL.

She was listed for dilatation and curettage and was lying comfortably in bed when the gemeprost (cervagem, Ono Pharmaceut Ltd Osaka Japan) was inserted. Ten minutes later, she presented with severe retrosternal chest pain, diaphoresis, nausea and vomiting. She had a heart rate of 90 beats per minute with a blood pressure of 160/100 mm Hg.

A diagnosis of acute myocardial infarction was made and confirmed by a 12-lead ECG which showed anterior wall infarction (Fig. 1).

She was immediately given sublingual nitroglycerin, intravenous morphine and oxygen via a face mask. She responded to the medication and the chest pain subsided.

She was transferred to the intensive care and further ECG showed that the ST elevation in V1 and V2 had resolved significantly although cardiac enzymes and troponin T were elevated.

She was subsequently transferred to cardiac intensive care in another institution to be managed by the cardiologists. She recovered from the myocardial event and was discharged home 7 days after the infarction. The patient refused further angiographic intervention and hence we were unable to know if she had any coronary artery disease.

Discussion

Gemeprost is a prostaglandin E1 analogue (16, 16 dimethyl PEG1-methylester) and has been in use in local institutions. It exists as a 1 mg vaginal pessary and it is used for dilating the cervix for curettage in first trimester termination of pregnancy and also for dilatation and curettage of the uterus in patients with abnormal uterine bleeding. It is also recommended for medical abortion and it has also been recently used to reduce postpartum haemorrhage.

A literature search showed that more than 200 studies have been done on this drug since it was introduced in the late 1980s and early 1990s. There have not been any trials done on prostaglandins E1 with regard to its usage on dilating the cervix for curettage in non-pregnant patients. The safety of gemeprost has often been questioned. Myocardial infarction was mentioned in 2 case reports in relation to its usage for medical abortions.^{1,2} Schulte-Sasse¹ had reported 4 incidents of myocardial ischaemia due to coronary vasospasm after it was used to induce abortion. Lauer and Berentelg² also reported 2 cases whereby 1 patient had cardiogenic shock and the other had acute myocardial infarction. All these patients were in the childbearing age group.

Thong and Baird³ and Wiener and Evans⁴ had reported uterine ruptures after repeated doses of gemeprost pessaries were given for medical abortion in 1990 and 1991. However these were questioned by Scioscia et al,⁵ who had done a series of studies on gemeprost on medical abortions in 2005. In another study carried out by Scioscia et al,⁶ of gemeprost in mid-trimester abortion on parturients with uterine scar, there was no significant evidence of severe complications related to uterine rupture.

There has not been any report on myocardial infarction

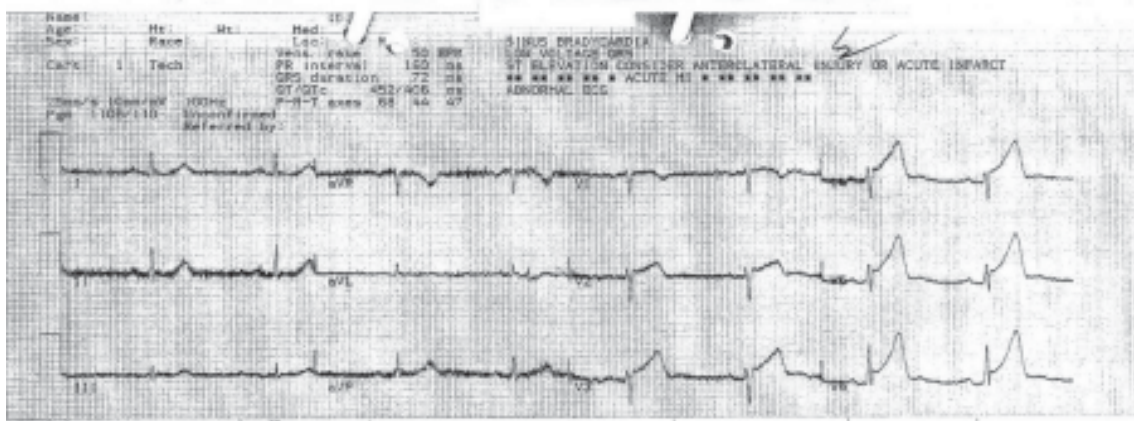


Fig. 1. Acute myocardial infarction in the anterior septal wall and left ventricle.

in women of other groups, especially those listed for dilatation and curettage. Our report is the first case featuring in an elderly patient undergoing dilatation and curettage.

Gemeprost is a drug to be used with caution in patients with risk factors for ischaemic heart disease, chronic obstructive lung disease, asthma, uterine scarring, previous hysterotomy, myomectomy and lower segment Caesarean section (LSCS). It is also not recommended for children and elderly patients. It is known to cause coronary vasospasm, bronchospasm, headache, dizziness, abdominal cramps, nausea and vomiting.

This case report illustrates the need for caution when using gemeprost in minor gynaecological procedures, especially in the elderly population, which has a higher risk of ischaemic heart disease. The incidence of myocardial infarction pertaining to the usage of the drug is low. This patient may have had underlying coronary disease, resulting in the myocardial infarction. The acute myocardial infarction may have been precipitated by the stress of coming to the hospital and anxiety. There is no evidence to suggest that the myocardial event was the result of coronary vasospasm caused by the drug – gemeprost. However, taking into account that no other drug had been given during her initial admission for day surgery and the occurrence of the temporal event, it was seen to be the most likely cause.

Patients who are going to receive the drug should inform the doctor if they have symptoms of ischaemic heart disease and other relevant risk factors such as anaemia. This should help to reduce the incidence of cardiac ischaemia. Preoperative investigations should be warranted before proceeding with the insertion of the gemeprost and

if not indicated, the drug should not be used. Several recommendations have been made to educate and notify our local institutions regarding possible cardiac morbidity with the use of gemeprost.

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