

# Heart STOPping drama post Misoprostol: a cautionary tale

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## CASE

Patient X is a 42yo with 12/40 DCDA pregnancy for planned surgical termination of pregnancy (STOP)

### Past Medical History:

- Bipolar Affective Disorder (currently unmedicated)
- Hypothyroidism (currently unmedicated)
- Viral pericarditis 2016 (no Troponin rise)
- Current tobacco smoker >20/day

Prescribed 400mcg buccal Misoprostol for administration at home for cervical preparation pre-STOP.

### Events:

Witnessed collapse at home 1 hour after Misoprostol → Ambulance called → On arrival (~15 minutes after collapse): GCS 3, ECG Asystole → 2 rounds CPR → Ventricular Fibrillation → 2 x shocks administered → return to spontaneous circulation → Intubated/ventilated/adrenaline infusion → Transferred to Emergency Department → On arrival in ED adrenaline infusion weaned and transferred to the Intensive Care Unit → on arrival HR 125, BP 120/80.

### Investigations:

Blood Tests	Imaging
Hb 146 WCC 43.3 Platelets 382 CRP 6 Troponin 1.08 → 2.21 after 6 hours; Tryptase 2 (normal) Na 133 K 3.5 Cr 80 eGFR 79 ALT 241 AST 302 ALP 164 GGT 80 Albumin 34 VBG pH 7.14 CO2 58 HCO 19 Lactate 4.7	CXR: diffuse infiltrates bilaterally TTE: (on admission) global hypokinesis; (exit) normal atria, left and right ventricles, normal LVEF, normal valves, normal pulmonary artery pressures



Image from: <https://www.webmd.com/drugs/2/drug-6111/misoprostol-oral/details>

### Issues in ICU:

- Ischaemic brain injury: 2 week inpatient rehabilitation stay, MRI NAD, symptoms improving.
- Ischaemic hepatic injury: mild, resolved
- Spontaneous miscarriage → Retained products of conception: curettage performed 3 days later → histopathology: products of conception confirmed.
- Aspiration pneumonia: treated with 1 week IV Augmentin Duo Forte
- Tongue laceration from intubation: repaired in theatre

**Follow up:** Implanon in situ, Rosuvastatin 20mg daily, followed up with Cardiologist, good recovery from ischaemic brain injury with minimal residual deficit, persistent discomfort secondary to tongue laceration.

## DISCUSSION

A possible mechanism for cardiac arrest after the administration of misoprostol is CORONARY VASOSPASM. This is the result of hyperreactivity of the vascular smooth muscle cells precipitated by a vasoconstrictor stimulus. In this case, misoprostol can act via E-type Prostanoid receptors to cause coronary vasospasm<sup>1</sup>.

Risk factors for coronary vasospasm include smoking, the most significant risk factor, with an adjusted OR 2.41<sup>2</sup>, Japanese or Taiwanese ethnicity, Male sex, Age 40-70 with the prevalence decreasing after age 70. Precipitants for coronary artery vasospasm may include physical or psychological stress, alcohol consumption, hyperventilation, Valsalva, cocaine, ergot alkaloids, migraine medications such as Sumatriptan and chemotherapy medications such as Capecitabine<sup>3</sup>.

There were 6 other case reports found in the literature of prostaglandin administration leading to cardiac arrest, with the hypothesised mechanism being coronary vasospasm:

1. 29yo 10/40 termination of pregnancy for renal disease, hypertension, obesity, 20 cigarettes/day given 1mg Gemeprost + Syntometrine<sup>4</sup>
2. 32yo 18/40 MTOP, no sig PMedHx, smoker 8/day given 1mg Gemeprost x 2, no coronary artery disease found<sup>4</sup>
3. 32yo, non smoker, PHx of reversible hypertension associated with COCP given Sulprostone infusion<sup>5</sup>
4. 42yo, PHx hypertension given 200mcg misoprostol sublingual pre STOP, severe coronary vasospasm requiring GTN infusion<sup>1</sup>
5. 39yo, heavy smoker, methamphetamine use, alcohol abuse given 800mcg buccal misoprostol<sup>6</sup>
6. 32yo 17/40 MTOP, smoker 10/day given 200mcg cervical ripening then 800mcg misoprostol PV<sup>7</sup>

## CONCLUSION

Cardiac arrest after the administration of misoprostol may be caused by coronary vasospasm. This is a very rare, but serious, adverse effect.

## REFERENCES

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