



Vasopressin Overdose Leading to Hemodynamic Instability and Cardiac Dysfunction: A Case Report

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Introduction

Vasopressin, a potent vasoconstrictor commonly used in surgical procedures, is generally safe when administered within recommended doses. However, inadvertent overdose can lead to significant complications. We present a case of vasopressin overdose during a myomectomy procedure, resulting in severe hemodynamic instability and subsequent cardiac dysfunction.

Keywords: Vasopressin, overdose, hemodynamic instability, cardiac dysfunction, myomectomy.

Case Presentation

On date 18 May 2023 a 37 years old lady with history of partial thyroidectomy 3 years ago and mild asthma scheduled for huge multiple myomectomy operation.

Patient lab tests before operation:

Free T3: 2.21pg/ml.

TSH: 0.77ulU/ml

Free T4:0.90ng/ml.

FBS: 121mg/dl

HGB:10.8gr/dl.

WBC: 5.49

K:4mmol/L.

Na:142mmol/L.

Creatinine:0.75 mg/dl

Induction of anesthesia done by 100ug fentanyl 100mg propofol and 40mg rocuronium and laryngeal mask no.4 used for ventilation at 8.30.

The operation started midline incision done and uterus exposed.

At this time gynecologist asked permission to use diluted vasopressin injection 20 units in 100ml normal saline in myoma to prevent excessive bleeding after permission given injection started at 8:50AM.

At this time patient vital signs was stable **BP:** 140/90 **HR:**87 **SPO2:**99%

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ETCO₂:38 around 9AM we notice HR increased to 110 and suddenly BP dropped to 37/20 the ETCO₂ and SPO₂ still was normal first we thought it could be instrumental error we stopped the operation and asked surgeon about bleeding that was negative then checked BP again 35/22 mmhg and no pulse and we also noticed ET:co₂ is decreasing at this time we intubated patient by Cuffed ETT and we suspicioned to anaphylactic shock and diluted 1mg Adrenaline in 10ml purified water and inject 4 ml after injection HR increased to 135 and BP increased to 80/50 we gave 200mg hydrocortisone and 8mg dexamethasone and norepinephrine 12mcg/min infusion after 2minutes Bp: increased 100/60 and we let the surgeon to finish the operation.

Patient was stable for 15 minutes and then again BP showed 40/25 mmhg and again no pulse.

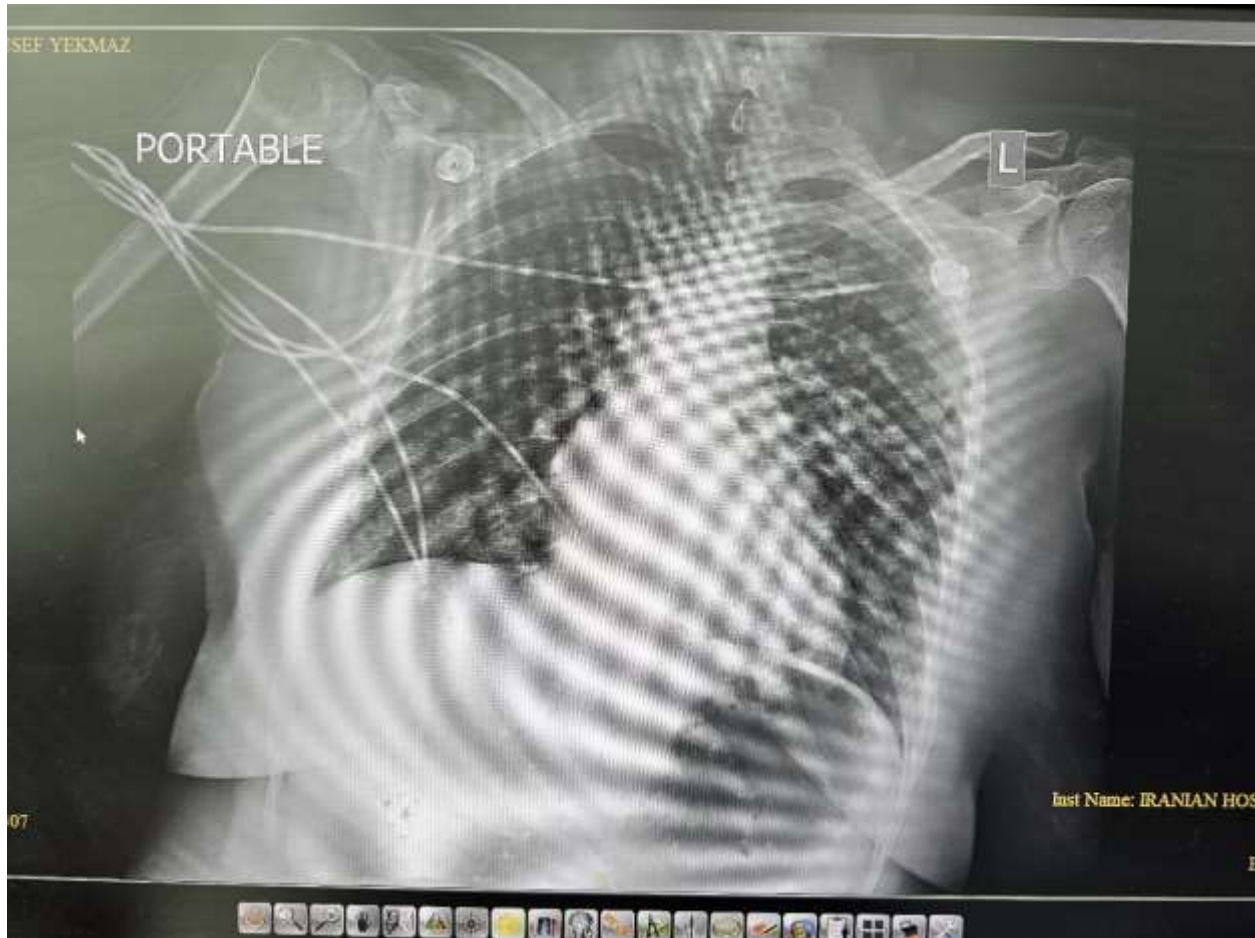
At this time we diluted phenylephrine and 50mcg in 1 minute injected after injection of 3 dose in 5 minutes interval BP reached to 110/65 mmhg

HR:135/min Spo₂:97 ETCO₂:38

Patient was stable for 20 minutes and after we noticed Spo₂ is dropping fast to 80% then 60% then 40% but BP was normal and ETco₂ increasing at this time we did ausculted bilateral rales in lungs and too much white liquid coming out of ETT we intermittently sectioned ETT and ventilate patient by 100% oxygen and spo₂ rised to 88%.

After 2 hours operation finished, we did recovery in operation room by ETT suction and 100% oxygen after 45 minutes patient was stable spo₂ 95% and HR: 110/MIN BP: 13/80 we reversed patient by suggamadex and extubated fully awake and oriented we sent her to ICU immediately in ICU she complains of mild pain and shortness of breathing the spo₂ was 98 with simple mask.

Around 11:00 AM one of OR staff reported that gynecologist injected 2 ampule 40u total 80u diluted in 100 ml normal saline and injected all in myoma immediately cardiologist consultation asked in ICU ECG taken echo cardio done and Na K Bun Cr troponin sample sent.



18.05.2023

BUN:11mg/dl. Na: 141. K: 4

Troponin level 3.21

ProBNP: 13556

ECG was normal but in echo cardiologist noticed hypokinetic left ventricle.

Patient was good only complain of shortness of breathing.

The day after the patient transferred to CCU.

19/05/2023

Troponin level 2.42

20/05/2023

Troponin level 0.88

22/05/2023

ProBNP: 3245

On **23/05/2023** patient discharged from hospital with good condition.

Conclusion

This case highlights the potential complications of vasopressin overdose, including severe hemodynamic instability and cardiac dysfunction. Anesthesiologists and surgical teams should exercise caution while administering vasopressin, ensuring accurate dosing and vigilant monitoring to prevent such adverse events. Prompt recognition and appropriate management are crucial in achieving successful patient outcomes.

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