



PANIC ATTACK WITH A RASH AFTER PERIPHERAL NERVE BLOCK.

Anaesthesiology

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ABSTRACT

Panic attacks in patients in the operating theatre can pose a multitude of challenges to treating anaesthesiologists. As the symptoms are comprehensive and varied, they can be confused with other emergency conditions like severe allergic reactions and local anaesthetic toxicity. We report a unique case of a panic attack with a rash after axillary block for a thumb ligament reconstruction surgery in a patient with undiagnosed anxiety illness. Twenty minutes after the block, the patient complained of breathing problems and dizziness which was associated with non-itchy blotchy rash, tachycardia and hypertension. The first episode was controlled by midazolam however she developed the same signs and symptoms at the start of surgery following which general anaesthesia was administered and extubated uneventfully after the operation. We observe from this report that rash could be associated with panic attacks and the presentation could easily confound us in arriving at the diagnosis in patients with unreported or undiagnosed anxiety illness.

KEYWORDS

BACKGROUND

The practice of regional anaesthesia in block-only surgeries or awake anaesthesia can pose a high level of anxiety to patients. This compounds the situation if the patient belongs to a young age group or with undiagnosed/undisclosed psychiatric problems.^{1,2} The doctor-patient relationship in the practice of anaesthesia is brief but can be highly intense. The anaesthesiologist should be very much aware of the psychiatric symptoms which can exacerbate in connection with stress during the peri-operative period. Hence preparing and supporting a patient for the awake surgeries become paramount to the best outcome. Anaphylaxis is an overwhelming allergic reaction that is occasionally misdiagnosed and confused with other conditions such as panic attack/anxiety disorder. Panic attack could also be confused with local anaesthetic toxicity when the latter presents with an excitatory phase of central nervous system toxicity. Thus, it is crucial to quickly identify and diagnose the cause because treatment options can vary significantly depending on the nature of the clinical condition.

Case Presentation

A middle-aged female patient, 62kg, 172cm, the American Society of Anaesthesiologists' physical status I, was scheduled for a left thumb ulnar collateral ligament reconstruction under axillary block only. Her medical history was unremarkable except that she had a general anaesthetic for a bladder reconstruction procedure which was uneventful.

Her pre-operative physical examination, routine blood tests and electrocardiography (ECG) were all within normal limits. Standard patient monitoring included non-invasive blood pressure (NIBP), ECG and pulse oximetry. Routine sedative midazolam was avoided initially as we wanted to wait for the complete action of the nerve block before the surgical incision. The initial vital signs were stable and within normal limits. Heart rate was 68/min, respiratory rate 16/min, blood pressure was 126/74 mmHg and temperature was 36.3°C. An axillary block with two separate injections was performed under ultrasound guidance. The arm to be blocked was abducted approximately 90 degrees. Then skin was disinfected, transducer was positioned on a short axis to identify the median, ulnar, radial and musculocutaneous nerves. After skin infiltration by lignocaine 2% at the puncture sites, a 22G X 50mm Sonoplex needle (Pajunk, Germany) was inserted in-plane from the anterior aspect on two separate occasions and a total of 20 ml of 0.75% Ropivacaine was injected around the nerves with frequent aspirations in between to decrease intravascular injection risk. The patient was stable throughout the procedure and once the block started to act, she was shifted to the ward and was monitored by the recovery nurse while waiting for the complete action of the nerve block. Approximately after 20 minutes patient started to become anxious and complained of difficulty in breathing. She was immediately attended by the anaesthetic team in the ward who noted that she was visibly agitated with a heart rate of 110/min, NIBP of 200/110 mmHg, room air saturation of 100% and respiratory rate of 32/min. On auscultation chest was clear, there were no other signs and symptoms of airway obstruction like stridor and she

was able to cough. On examination, there were rashes over the upper limbs, chest, back and neck which were non-blanching patches and measured > 5 mm in diameter. The patient was immediately shifted to the anaesthetic room and was put on an oxygen mask at 4 litres per minute and administered Hydrocortisone 100 mg, Piriton 5mg, and Midazolam 2mg intravenously. Within 2 minutes after drug administration, her vitals settled to her pre-anaesthetic levels, rashes disappeared, and agitation decreased. A blood sample was sent to measure serum mast cell tryptase level to detect an allergic reaction as recommended by the NICE clinical pathway guidelines in treating anaphylaxis.³ Throughout this episode, her ECG was in sinus rhythm and no ventricular dysrhythmias occurred. Further, she was asked to report if there were any symptoms of perioral numbness, tinnitus, light-headedness, nausea, vomiting or metallic taste to which she replied she had only dizziness. She chose to go ahead with the procedure when she was asked whether to proceed or abandon the operation. The blocked arm was checked for complete nerve block before shifting her to the operating theatre. However, the patient started to develop the same clinical picture of difficulty in breathing and rashes over the upper torso and neck at the beginning of the surgery. After explaining briefly to the patient about the conversion to general anaesthetic, she was induced with 150 mg of propofol and a supraglottic airway (igel-4) was placed to maintain the airway. Anaesthesia was maintained with oxygen, air, sevoflurane and controlled ventilation. Post general anaesthetic her rashes disappeared again, and the surgical procedure was finished within 20 minutes and the patient was extubated uneventfully. The patient was observed and monitored in the recovery room for a further 3 hours while she was awake, and alert and had evidence of an effective axillary block with good post-operative analgesia. On examination, she had no focal neurological deficits apart from the expected motor and sensory weakness in the blocked arm. A second blood sample for serum tryptase was sent before shifting her to the ward. She was discharged later that evening without any sequelae.

Differential Diagnosis

When the patient was attended in the ward, we noted that she was anxious, tachypnoeic and had a rash over her upper limbs and chest. Hence, we thought of anaphylaxis/severe allergy to local anaesthetic drugs because apart from lignocaine and ropivacaine she was not given any other drug during axillary block. She was administered hydrocortisone and chlorpheniramine maleate injection immediately in the anaesthetic room. However, she had elevated blood pressure and a strong pulse which is uncharacteristic of severe anaphylaxis. Although she complained of difficulty in breathing, her tongue was normal, she was able to cough and on auscultation her chest was clear and oxygen saturation on the pulse oximeter was more than 98%. When we administered midazolam to calm her down, she settled within two minutes. Her rashes completely disappeared, and her vitals came back to pre-anaesthetic levels. We also thought of local anaesthetic systemic toxicity with central nervous system symptoms however she did not complain of peri-oral tingling or numbness, slurring of speech, audio-visual disturbances, or nausea and was alert

and conscious throughout the episode. She was able to answer the questions without any confusion. When the patient again complained of difficulty in breathing and rashes over the body and began to panic when the surgery was about to start, we arrived at the provisional diagnosis of panic attack and treated accordingly. We explained about conversion to general anaesthetic and proceeded with it. Post general anaesthetic the rashes disappeared again, and vitals were stable throughout the surgical procedure. After the surgery, her psychiatric history was re-evaluated, although she denied any psychiatric history in the recovery room, her husband later admitted that she suffered from anxiety. This information was not revealed during the pre-anaesthetic assessment.

Outcome and Follow-up

The serum mast cell tryptase levels were within normal limits in two serial blood samples. Further patient was referred to allergy and clinical immunology for testing to rule out allergic reactions to lignocaine and ropivacaine. The patient was followed subsequently for six weeks for the result of allergy testing and was found to be non-allergic to local anaesthetics. She was then recommended to consult her General Practitioner (GP) to proceed further in the evaluation of her generalized anxiety illness.

DISCUSSION

A panic attack is a sudden episode of intense fear that triggers severe physical reactions when there is no real danger or apparent cause. panic attacks are terrifying episodes during which the person is convinced they are about to die or collapse. Without warning, an individual is suddenly overwhelmed by emotional and physical sensations that signal imminent death.⁴ Panic attacks can happen at any time or any place and are manifestations of the body's physiologic fight or flight response as it prepares to defend itself against real or perceived danger.⁵ The risk factors for panic attacks could be major stress, genetics, family history, post-traumatic stress disorder (PTSD), history of abuse, women, and young adults.^{1,2} Signs and symptoms of panic attack include hyperventilation, tightness of the chest, breathing difficulties, increased heart rate, flushing, sweating, and trembling. In our case, the patient complained of difficulty in breathing with increased respiratory rate, and dizziness and had tachycardia and reddish blotchy patches over the neck, arms, chest and back. Shady et al reported a case where a middle-aged woman developed a rash after each panic attack.⁶ The rash was described as speckles that were itchy and spread around the neck and trunk. Gupta et al reported two patients with a history of chronic idiopathic urticaria occurring in conjunction with a panic disorder.⁷ In our patient rash responded well to benzodiazepine and hydrocortisone. Schulz et al reported a similar case where a young woman was scheduled for ankle fusion with iliac graft surgery and underwent an uneventful sciatic and lumbar paravertebral nerve block and had a panic attack with visual hallucinations and hyperventilation after twenty minutes into the block. Her symptoms resolved after midazolam sedation. This patient had a psychiatric history of panic attacks which was undiscovered during the preanaesthetic visit.⁸ Similarly, in our case patient did not disclose her generalised anxiety issues in the preanaesthetic visit and there were no signs and symptoms to suspect as she had an uneventful general anaesthetic in the past. Several researchers have suggested that many patients prefer general anaesthetic to local or regional anaesthesia for surgical procedures.^{9,10} The Most common reasons for rejecting regional anaesthesia were not wanting to stay awake during the procedure, the unpleasant wait between the anaesthetic procedure and surgery and the possibility of experiencing needles and injection pain. During pre-anaesthetic visitation, both general anaesthesia and regional nerve block were discussed with our patient and she opted for general anaesthesia, but on the day of surgery, she decided to have a peripheral nerve block as she was concerned about the post-operative analgesia. Many researchers^{11,12} have suggested that patients require choice or involvement in decision-making in their health matters and this option and time to think about the anaesthetic choice was indeed given to our patient. Our patient also had to wait in the side room after the anaesthetic procedure for the nerve block to act completely which increased the time gap between the anaesthetic and surgical procedures. This can easily be experienced as a stressful time and may influence anxiety. McCleane et al suggested that making this waiting period as short as possible could lead to lesser preoperative anxiety.¹³ Our patient had a panic attack twenty minutes after the nerve block when the hand started to become 'more dead'. Mauleon et al suggest that during the initial stages of anaesthesia, the patient's inability to move or feel could lead to anxiousness and discomfort and they may

wish to have prior greater information about the anaesthetic course.¹⁴ Many factors may influence a patient's anxiety in conscious surgery like the surgeon's touch/feeling of the surgery, seeing their body being cut open or surgery being more painful than expected, possible repeated needle punctures, and the thought of numbness wearing off too quickly.¹⁵ In our case, the patient had a second episode of panic attack at the beginning of the surgical procedure and finally we had to give general anaesthesia to be able to continue with the operation. Preoperative anxiety is one of the important problems in surgical patients and evaluating the patients' anxiety and finding suitable approaches can be valuable. State-Trait Anxiety Inventory scale (STAI)¹⁶, Amsterdam Preoperative Anxiety and Information Scale (APAIS)¹⁷, and Hamilton Anxiety Rating¹⁸ Scale are a few of the commonly used tools to evaluate patient anxiety and reveal the causes of fear in patients. These tests could have been beneficial in our case if we had used any of the scales to measure anxiety during preoperative evaluation. Overall, reducing preoperative and intraoperative anxiousness and panic attacks in patients undergoing conscious surgery under regional anaesthesia involves effective communication in simple/layman's terms about the anaesthetic intervention prior to the day of surgery to dispel any misapprehension, exploring and discussing possible anxiety-provoking issues during awake surgery, maintaining theatre friendly environment like keeping the patient warm, a dedicated person for patient communication, reassuring about the local/regional anaesthetic intervention, administration of suitable pre-anaesthetic medications and a timely intervention to diagnose and treat anxiousness and panic attack.

Learning Points

1. Panic attack is an abrupt onset of fear or discomfort which triggers severe physical reactions when there is no apparent cause
2. Rash can be associated with panic/anxiety attacks which can appear on any part of the body and appear as raised bumps/hives.
3. In the presence of a pre-existing psychiatric illness, symptoms like dizziness, tingling, tinnitus, metallic taste, or any weird sensation are not specific for central nervous local anaesthetic toxicity after peripheral nerve block.
4. The anaesthetic information provision and intraoperative apprehension are interrelated and are predictors of increased anxiety on the day of surgery.

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