

Managing Exercise Induced Anaphylaxis in Labour

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Abstract

Exercise induced anaphylaxis is an uncommon condition first reported by Sheffer and Austen in 1980. In this condition there is an exercise-induced lowering of the mast cell degranulation threshold, causing release of histamine and other mediators leading to the progression of symptoms of anaphylaxis. These can range from mild cutaneous pruritis and urticaria to severe systemic manifestations such as hypotension, cardiovascular collapse, syncope and even death. In Pregnancy and Labour, this can result in a number of complications and challenges. We will describe a case we were involved with.

Keywords

Exercise Induced Anaphylaxis

1. Case

33-year-old primigravida presented at 38 + 5 weeks gestation to the Maternal Assessment Centre with spontaneous rupture of membranes. She had been reviewed routinely in antenatal clinic as she was having an IVF pregnancy. She experienced no complications throughout her pregnancy other than 2 episodes of reduced fetal movements at 28 and 34 weeks. All growth scans, dopplers and CTG's were subsequently normal. She was known to have rheumatoid arthritis however pregnancy had suppressed her symptoms and she did not require any medication for this during her pregnancy.

She was only identified as having Exercise Induced Anaphylaxis (EIA) on this admission when asked about allergies. She had been diagnosed with EIA 7 years previously by the immunology specialists and had 5 hospital admissions since then in relation to this diagnosis. It is only when running that she experiences major episodes of anaphylaxis resulting in immediate collapse with loss of consciousness and gradual onset of oedema and urticaria. During her admissions she responded well to adrenaline and chlorphenamine treatment and never re-

quired intubation or intensive care admissions. She carries an Epipen with her at all times and is advised not to exercise alone.

She can tolerate some exercise such as kick boxing which does not provoke a major attack. She is allergic to nuts however avoidance of these means she has not had an allergic response since childhood. She suffers from mild asthma however does not take regular inhalers.

Unfortunately, the on-call obstetric and anaesthetic teams were unaware of her EIA before this presentation. After a detailed assessment and discussion between the medical teams and the patient it was decided she would labour normally.

Based on successful management outcomes of previous case reports the delivery plan was to site an early epidural to reduce the stress of labour and provide effective analgesia. Initially Intravenous Hydrocortisone 200 mg and Intravenous Chlorphenamine 10 mg would be commenced when labour was established, followed by IV Hydrocortisone 200 mg and 10 mg Chlorphenamine every 6 hours until delivery. Treatment would be continued postnatally if required.

When admitted she had ruptured her membranes however after 12 hours she had no active contractions therefore augmentation with syntocinon was planned. She had an early epidural that was given before the normal nulliparous syntocinon regime was commenced. She also received IV Hydrocortisone and Chlorphenamine before the syntocinon infusion and every 6 hours thereafter. After 6 hours of syntocinon she was having strong, regular contractions and at 7 hours was fully dilated, fully effaced and baby was positioned occiput anterior. Her pain was well controlled with epidural top-ups. Some atypical fetal decelerations delayed the onset of pushing and the syntocinon was stopped and re-started after each deceleration resolved. After 4 hours it was safe for her to push however after half an hour of pushing a prolonged fetal deceleration lasting more than 4 minutes resulted in her having a Neville Barnes forceps delivery in the room. The patient delivered a healthy baby boy.

She did not experience any symptoms or signs of EIA and responded well to the management plan put in place. She recovered well did not require any Hydrocortisone and Chlorphenamine post delivery and was discharged 2 days later.

2. Discussion

EIA is an uncommon condition first reported by Sheffer and Austen in 1980 [1]. In this condition there is an exercise-induced lowering of the mast cell degranulation threshold, causing release of histamine and other mediators leading to the progression of symptoms of anaphylaxis. These can range from mild cutaneous pruritis and urticaria to severe systemic manifestations such as hypotension, cardiovascular collapse, syncope and even death [2]. There are few reports describing how to manage a patient with EIA in pregnancy and labour. It is important to recognise EIA in the peripartum as the stress of labour could induce anaphylaxis.

Considerations have been made regarding whether the patient should be advised to have an early elective Caesarean section to avoid the stress of labour or whether it is safe for her to have a normal vaginal delivery. In the literature there are only four case reports, the first, in 1985, described a patient who developed anaphylactic symptoms in two deliveries and subsequently was diagnosed with EIA precipitated by labour [3]. The second, published in 2007, described a patient previously diagnosed with EIA who had a successful uneventful normal delivery [4]. The third was published in 2010 and the lady had a normal delivery with forceps for fetal bradycardia [5]. The fourth report from 2013 discussed a lady with known EIA who had a successful vaginal birth after caesarean section however she also required forceps for prolonged second stage of labour [6]. In all of these cases the women were given an early epidural and IV Hydrocortisone and Chlorphenamine throughout labour which proved successful and they did not experience any signs of anaphylaxis.

3. Conclusions

We wish to report another successful normal vaginal delivery in a patient diagnosed with EIA by giving an early epidural and regular IV Hydrocortisone and Chlorphenamine throughout labour. The dilemma we had was whether it was safer to perform a caesarean section on this lady to avoid triggering a stress response, however, based on the positive outcomes of previous case reports, we felt it was justifiable to allow our patient to labour normally, with a low threshold to intervene if symptoms of anaphylaxis developed.

This case was different to all the others as we augmented this lady's labour with IV syntocinon. It did not affect the management or the outcome of the mode of delivery. This lady delivered 12 hours after being aug-

mented and despite a prolonged fetal bradycardia requiring the urgent use of NBF to deliver the baby, her labour was not complicated by symptoms of anaphylaxis. There is controversy around the safest mode of delivery in patients with EIA to avoid stress however to date normal vaginal delivery has deemed successful however more cases need to be reported in this regard.

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