

therefore decided to tolerate the place holders and perform spinal anaesthesia. The insertion of an LM in patients with peri-oral piercing jewellery may be current practice [7].

We conclude that piercing jewellery along or near the upper airway as well as place holders have to be seen as a potential danger to the patient independent of the anaesthetic procedure. Anaesthetists may be confronted with an increasing number of patients with oral piercings who request not to have the material removed for the operation. This individual wish has to be weighed against the risks of tissue trauma and pulmonary aspiration. We strongly suggest that for safety reasons all patients undergoing anaesthesia have to remove any peri-oral piercing material and may replace it temporarily by loop strings, but not keepers.

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References

1. Wright J. Modifying the body: piercings and tattoos. *Nurs Stand* 1995; 10: 27–30.
2. Kuczkowski KM, Benumof JL. Tongue piercing and obstetric anesthesia: is there a cause of concern? *J Clin Anesth* 2002; 14: 447–448.
3. Wise H. Hypoxia caused by body piercing. *Anaesthesia* 1999; 54: 1129.
4. Mandabach MG, McCann DE, Thompson GE. Body art: another concern for the anesthesiologist [Letter]. *Anesthesiology* 1998; 88: 279–280.
5. Oyo TL. Intubation sequence for patient presenting with tongue ring [Letter]. *Anesthesiology* 1998; 88: 279.
6. Radford R. Further hazards of body piercing [Letter]. *Anaesthesia* 2000; 55: 305.
7. Symons I. Body piercing [Letter]. *Anaesthesia* 2000; 55: 305.

Allergic reaction to hyaluronidase in cataract surgery

EDITOR:

Thiomucase® injectable is a pharmaceutical product containing hyaluronidase, a mucopolysaccharidase obtained from bovine testicles. Hyaluronidase breaks down hyaluronic acid, a key component of connective tissue, reducing viscosity and facilitating drug absorption [1]. Hyaluronidase has many clinically proven indications [2]: plastic surgery, ophthalmology and in dental anaesthesia as a spreading agent to facilitate local anaesthetic block. In paediatric oncology it facilitates drug penetration in chemotherapy [3]. Only a few cases of allergic reactions associated with hyaluronidase have been reported. In our hospital we have had only one case in 3285 ophthalmological surgical operations in 2 yr. We report a case of allergic reaction to hyaluronidase in a patient scheduled for cataract surgery.

A 71-yr-old male was admitted for cataract surgery. His surgical history included an uneventful transurethral removal of the prostate under spinal anaesthesia 5 yr before. He had no history of atopy or drug allergy. After intravenous (i.v.) administration of alfentanil 150 µg and propofol 25 mg a peribulbar block was performed using bupivacaine 0.5% 5 mL and mepivacaine 2% 5 mL with the addition of hyaluronidase 1 mL (100 IU). The patient developed a generalized rash, pruritus and periorbital oedema immediately after the injection. The operation was cancelled and hydrocortisone 100 mg and deschlorpheniramine 5 mg were administered i.v. All the symptoms disappeared within 6 h. Two hours after the reaction only the urinary methylhistamine level was positive: 215 µg mL⁻¹ (normal range up to 115 µg mL⁻¹). All other tests for allergy (complement factors C3, C4, C3a, latex specific IgE and serum tryptase level) were negative. Six weeks after the reaction allergic skin tests (prick test) to hyaluronidase were positive. Hyaluronidase SDS-PAGE immunoblotting revealed two IgE-binding bands of 35 and 36.4 kDa, respectively. Skin tests to bupivacaine, mepivacaine, alfentanil and propofol were negative.

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Peribulbar block with the association of hyaluronidase and local anaesthetics is a common practice in ophthalmic surgery. In ophthalmic surgery, allergic reactions to hyaluronidase are uncommon. In spite of this, four cases of early and local reactions in which symptoms disappeared rapidly after i.v. administration of antihistamines and corticosteroids [4–7] and one of the delayed reactions 28 h after hyaluronidase administration have been also reported [8]. Szepefalusi and colleagues [3] described five cases of serious systemic reactions after i.v. administration of hyaluronidase for treating central nervous system tumours. Apart from ours, this is the only other study which has described the molecular mass of the protein fraction involved: two IgE-binding bands of 73 and 41–43 kDa. Allergic sensitization by previous exposure is an essential event to suffer from an IgE-mediated reaction after drug administration, but unlike other published cases [5,7] our patient had not been previously treated with hyaluronidase.

We conclude that allergic reactions to hyaluronidase in ophthalmic surgery are rare and difficult to diagnose. Anaesthetists and ophthalmologists should be aware of the potential complications of this drug. Anaphylaxis to hyaluronidase in ophthalmic anaesthesia is usually IgE-mediated; nevertheless, it could produce a dangerous increase in intraocular pressure. Serious anaphylactic reactions have only been reported when hyaluronidase was administered i.v.

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References

1. Afify AM, Stern M, Guntenhoner M, Stern R. Purification and characterization of human serum hyaluronidase. *Arch Biochem Biophys* 1993; 305: 434–441.
2. Caballero T, Alonso A, De Miguel S *et al.* IgE-mediated anaphylaxis to Thiomucase, a mucopolysaccharidase: allergens and cross-reactivity. *Allergy* 2002; 57: 254–257.
3. Szepefalusi Z, Nentwich I, Dobner M, Pillwein K, Urbanek R. IgE-mediated allergic reaction to hyaluronidase in paediatric oncological patients. *Eur J Pediatr* 1997; 156: 199–203.
4. Taylor IS, Pollowitz JA. A little-known phenomenon: allergic reaction to hyaluronidase. *Ophthalmology* 1984; 91: 1003.
5. Munning Jr CA. Hyaluronidase allergy simulating expulsive choroidal hemorrhage. *Arch Ophthalmol* 1994; 112: 585–586.
6. Agrawal A, McLure HA, Dabbs TR. Allergic reaction to hyaluronidase after a peribulbar injection. *Anaesthesia* 2003; 58: 493–494.
7. Ahluwalia HS, Lukaris A, Lane CM. Delayed allergic reaction to hyaluronidase: a rare sequel to cataract surgery. *Eye* 2003; 17: 263–266.
8. Kirby B, Butt A, Morrison AM, Beck MH. Type I allergic reaction to hyaluronidase during ophthalmic surgery. *Contact Dermat* 2001; 44: 52.

Intermittent manual positive airway pressure for the treatment and prevention of atelectasis

There is growing interest in noninvasive positive pressure ventilation as the primary approach for ventilatory support in numerous clinical settings [1] including the management of spinal cord injury [2]. Continuous positive airway pressure (CPAP) and bilevel positive airway pressure (BIPAP) are the mainstays of those interventions and several types of masks (full face masks, nasal masks and helmets) are

successfully used [3]. This case report demonstrates the feasibility and successful use of intermittent manual positive airway pressure (IMPAP) for the treatment and prevention of atelectasis in spontaneously breathing critically ill patients.

Case report

A 48-yr-old female was admitted to the intensive care unit (ICU) after drainage of a spontaneous C5 to C7 epidural and paravertebral abscess. There was pronounced weakness in her right leg (0–1/5) and in her left leg (3/5). She also exhibited bilateral arm weakness

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