

An unusual case of acute unilateral parotitis following abdominal surgery.

Report of a case and review of the literature



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Daniel Sermoneta*, Claudio Lodoli*, Massimo Di Mugno*, Germano De Cosmo**, Daniele Gui*

*Dept. of Surgery, Università Cattolica del Sacro Cuore, Rome, Italy

**Dept. of Anesthesiology, Università Cattolica del Sacro Cuore, Rome, Italy

An unusual case of acute unilateral parotitis following abdominal surgery: report of a case and review of the literature

BACKGROUND: Postoperative parotitis is a well known entity which can develop in patients who undergo major abdominal surgery.

METHODS: We present a case of postoperative parotitis which occurred after a laparotomy for incisional hernia repair.

RESULTS: After establishing diagnosis by ultrasonography assessment and blood chemical tests, patient was successfully treated by morphine discontinuing and antibiotics therapy.

CONCLUSION: Beside sialolithiasis, sitting position or dehydration we suggest that morphine could play a substantial role in the development of postoperative parotitis.

KEY WORDS: Postoperative parotitis, Surgical parotitis, Facial swelling.

Background

Postoperative or surgical parotitis is a well documented entity which is reported to occur in 1 out of 1000 patients who undergo major abdominal surgery, especially in case of marked dehydration.

We present a patient who developed this condition after a laparotomy for incisional hernia repair and who was successfully treated by morphine discontinuing and antibiotics therapy. A discussion about diagnosis, physiopathology and treatment is provided.

Case report

A 60-years-old woman underwent a surgical operation for recurrent incisional hernia after laparotomy for gastric hemangioma. The patient's past medical history was

significant for arterial hypertension and dilatative cardiomyopathy; she was in therapy with salicylate (150 mg/die), amlodipine (5 mg/die), ramipril (5mg/die) and furosemide (25 mg/die). Blood tests, including amylase, resulted within normal ranges.

Anesthesia was induced with an intravenous bolus injection of fentanyl 150 mcg, propofol 200 mg and vecuronium 10 mg. During the intervention, further injections of fentanyl (50 mcg) were administered in case of pain signs (increasing in blood pressure or in cardiac frequency). The trachea was intubated smoothly and anesthesia was maintained with sevoflurane. The operation was uneventful and a single-day elastomeric pump with ketorolac 90 mg and morphine 10 mg was inserted for an optimal postoperative pain management.

The following morning the patient complained of painful monolateral facial swelling in the region of the left parotid gland, which was very clear at clinical examination (Figs. 1-2). The patient was examined with ultrasonography (Hitachi, Tokio, Japan, model H21 equipped with a 13 Mhz small-part transducer) which revealed an edematous and enlarged left parotid with an hyperchogenic pattern; no signs of stones, focal lesions or dilatation of excretory ducts were present (Fig. 3). Contralateral (right) parotid was unremarkable. Blood

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For correspondence: Daniel Sermoneta MD, Dipartimento di Scienze Chirurgiche, Università Cattolica del Sacro Cuore, Policlinico Agostino Gemelli, Largo A. Gemelli 8, 00168 Rome, Italy (e-mail: daniel.s@tiscali.it).



Fig. 1-2: A very visible facial swelling in the region of the left parotid gland.

examinations revealed a significant increase in serum amylase levels (2899 U/l): salivary-type amylase was 96.7% (reference value lower than 60.0%), while pancreatic-type was within normal range (3.3%, reference value lower than 40.0%).

The elastomeric pump was immediately disconnected, blood pressure was strongly monitored and oral antibiotics therapy was started (amoxicilline/clavulanate 1 g tid for 7 days); symptoms resolved on day 2 of therapy; the patient was discharged on day 3 after admittance in a good condition. The ultrasonographic control at 5 days showed a notable decrease in volume and a significant reduction in the echogenicity, without signs of lesions or stones (Fig. 4).

Discussion

As long ago as 1836 surgery was considered as a factor predisposing to acute bacterial sialadenitis¹; postsurgical dehydration was recognized as the main risk factor for the development of parotitis which in the 19th century

was also associated to a high mortality: an emblematic case is the death of president Garfield in 1881, due to suppurative parotitis following abdominal surgery².

Postoperative or *Surgical* parotitis became a nosologic entity in the second half of the last century, when the improvement in postoperative fluid management considerably reduced the risk of parotitis and its related mortality. Such complication is reported to occur in 1 out of 1000 patients who undergo major abdominal surgery³, with a time of onset from 1 to 15 weeks, although the most frequent time of appearance seems to be between postoperative days 5 and 7⁴.

Beside dehydration, several causes have been invoked for postoperative parotitis: in case of sialolithiasis the mechanical obstruction of the Stensen's duct can lead to bacterial infection, and this is the reason why we consider an ultrasonography mandatory in case of postoperative parotid swelling. Some common drugs, such as antidepressant, antihistamines and antihypertensives could also improve oral or systemic dehydration by means of anticholinergic and diuretic mechanism. Luxation of the temporomandibular joint during induction of anesthesia

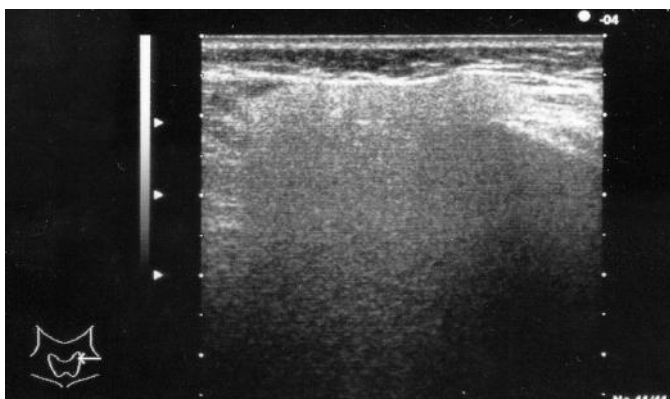


Fig. 3: A large parotid gland in transverse scan showing a diffuse and increased echogenicity without signs of stones or focal or diffuse alterations.

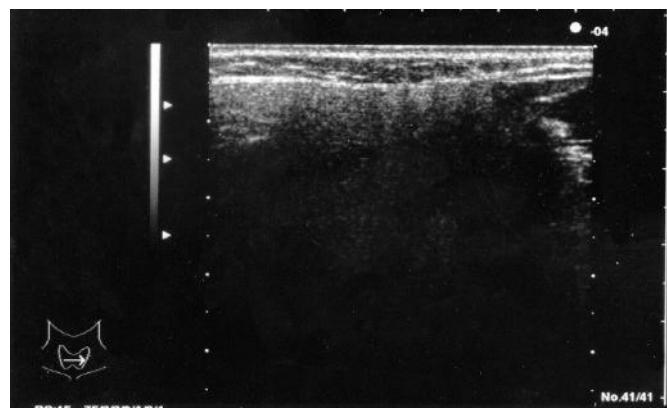


Fig 4: Control of parotid after 5 days showing a normal gland with no signs of focal or diffuse alterations.

was proposed as a risk factor in absence of radiological abnormalities⁵; in neurosurgical patients, another possible cause is the sitting position, with mild flexion and tilt of the head which could cause stasis in the contralateral parotid gland, thus bringing to gland swelling and inflammation signs appearance⁶.

Anesthesia drugs could also play a role in the development of postoperative parotitis: morphine, widely used to improve the analgesia, reduces amylase secretion from parotid acins⁷ and it is also able to both increase tone and decrease propulsive activity of smooth muscle throughout the gastrointestinal tract, probably via \bar{I} -receptors association⁸. Parotid gland duct is surrounded by mioepithelial cells, comparable to smooth muscle cells: it was therefore suggested that morphine may cause parotid duct spasm with subsequent salivary stasis⁹.

In absence of sialolithiasis, sitting position or dehydration (despite the use of diuretics, our procedure was not associated with blood or body fluids loss and blood pressure always stayed within normal range), we assume that morphine played a substantial role in the development of parotitis which, for the matter, immediately disappeared when morphine therapy was broken up.

Riassunto

La parotite postoperatoria è una entità nosologica ben documentata la cui incidenza, in letteratura, è di 1 su 1000 pazienti sottoposti a chirurgia addominale maggiore, specialmente in caso di disidratazione marcata. Presentiamo il caso di una paziente che ha sviluppato tale condizione dopo una laparotomia per plastica di laparocele; ottenuta la diagnosi mediante l'ausilio

dell'ecografia, oltre che dei test sierologici, la paziente è stata trattata con successo attraverso la sospensione della morfina e la somministrazione di antibiotici.

Accanto ai già noti fattori eziopatogenetici, quali la scialolitiasi, la posizione di semi-ortostatismo e la disidratazione marcata, riteniamo che anche la morfina rivesta un ruolo sostanziale nello sviluppo della parotite postoperatoria.

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