

MANAGEMENT OF A CASE WITH ACCIDENTAL INJECTION OF FORMALIN MISTAKEN FOR LOCAL ANESTHETIC IN THE INFRAORBITAL NERVE REGION

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INTRODUCTION

Formalin, the allergen of the year 2015, declared by American Contact Dermatitis Society², is widely used in dentistry as a disinfectant and fixative. Formaldehyde is its main component. It can enter the body through inhalation or ingestion in attempted suicide. Inadvertent Injection of formalin into the infraorbital space represents a unique case lending an opportunity to analyse the effects of this chemical and havoc it may wreck in the dental practice upon mishandling.

CASE REPORT

A 21 year old female reported, to the Department of Conservative Dentistry & Endodontics, Dr.R.Ahmed Dental College & Hospital, for Apicoectomy on 11 & 12.

A solution of 1 mL of local anesthetic was administered for infraorbital block. Immediately the patient became restless, complaining of severe pain and burning sensation at the site of injection. The procedure was stopped immediately and patient was brought to the postgraduate section. It was found that the vial thought to contain a local anaesthetic actually contained a clear liquid with an offensive odour which was **formalin**. On examination, a warm gradually increasing swelling with erythema was present extraorally. The patient had intense increasing pain with burning sensation. The swelling was severely tender on palpation. However, intraorally the site of injection was normal.

Immediately 10-15 mL of normal saline was injected in the same region for the purpose of dilution. After having medical advice, she was administered Inj.Dexamethasone Acetate 8 mg i.m. stat.

Just afterwards, she was taken to Department of Medicine, in the contiguous NRS Medical College & Hospital wherein she was advised Inj.Augmentin 1.2 gm B.D., Inj.Metronidazole 100 mL T.D.S. Inj.Amikacin 500 mg B.D., Inj.Pan 40, Prednisolone 40 mg for 7 days in a tapering dose, Neurobion & Chymoral forte and was admitted in Oral Surgery Department & kept under close surveillance.

Due to complaint of burning sensation and pain in the lower eyelid region, Ophthalmologists examined her Visual acuity, Fundus, ocular movements etc. & found normal. Only Moxifloxacin eyedrops plus Tablet Cetirizine 10 mg B.D. was added.

Swelling increased in size in the first 24 hours, diffusing to involve almost the entire right side of face. She was unable to open the eye (Fig.1).

CT-PNS scan was conducted - a soft tissue swelling with adjacent normal anatomic structures were revealed (Fig.2). Changes within the swelling were monitored regularly by ultrasonographic imaging which denoted heterogenous nonspecific swelling (Fig.3).



Fig.1: Day one

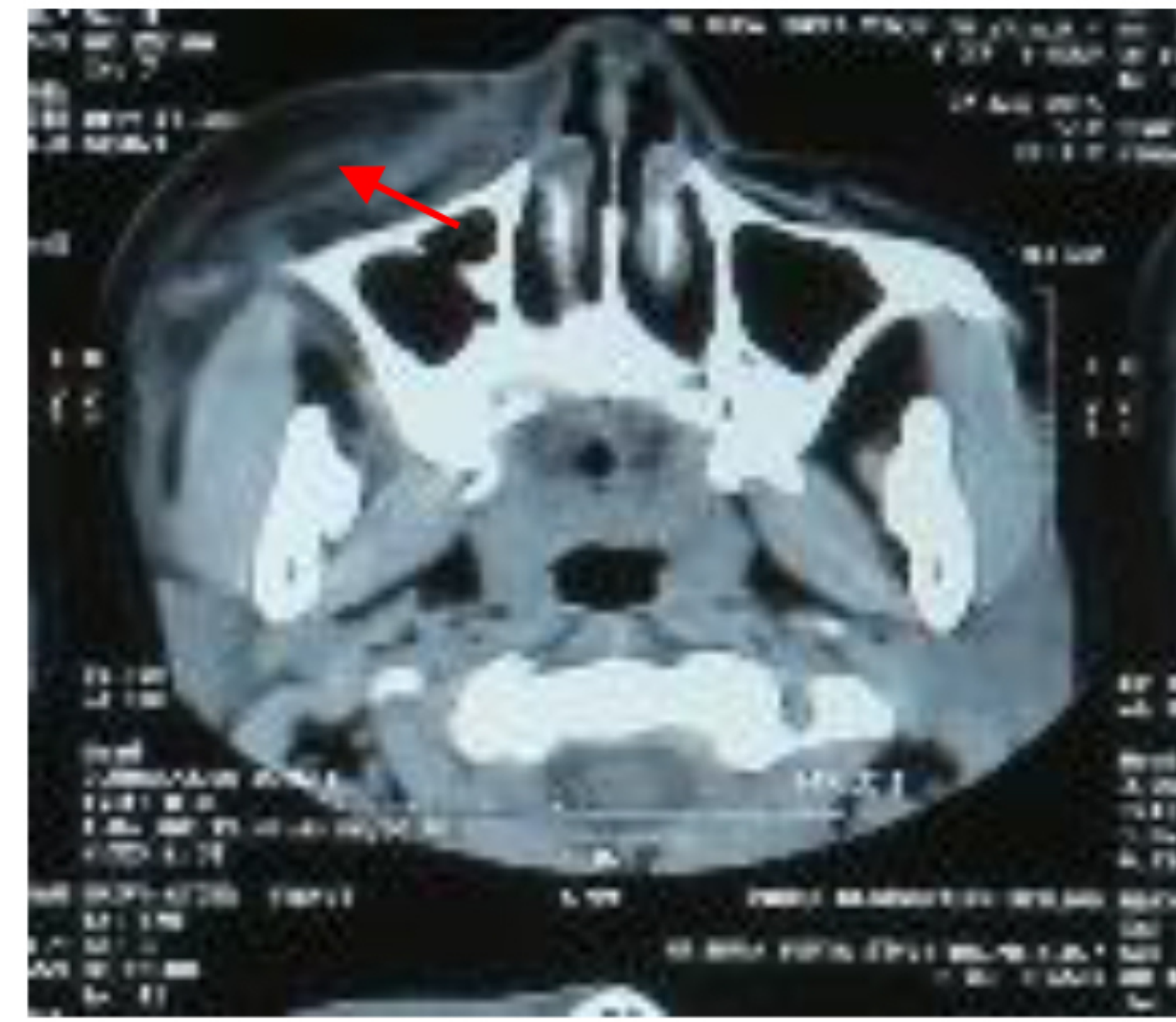


Fig2: CT-PNS scan

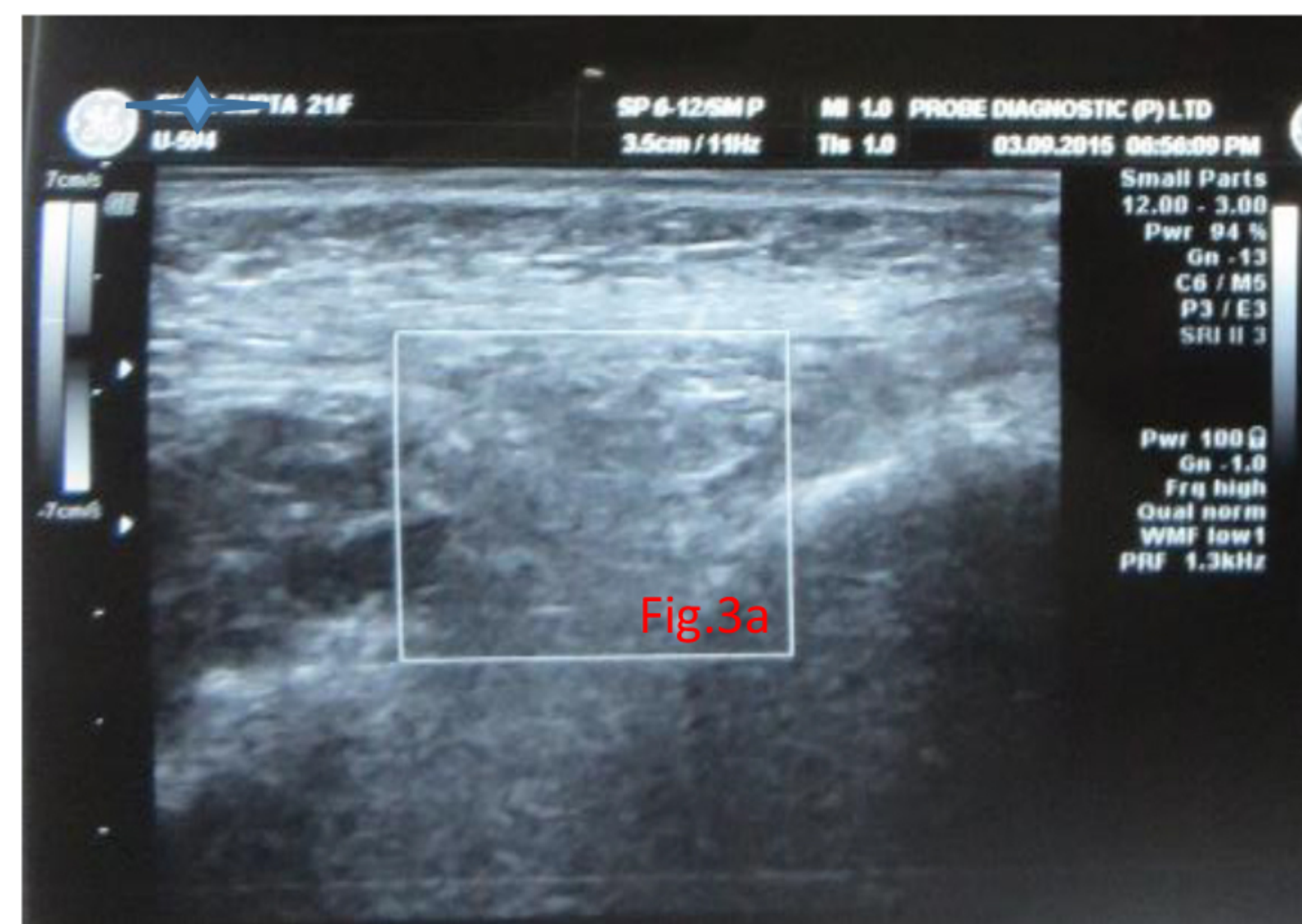
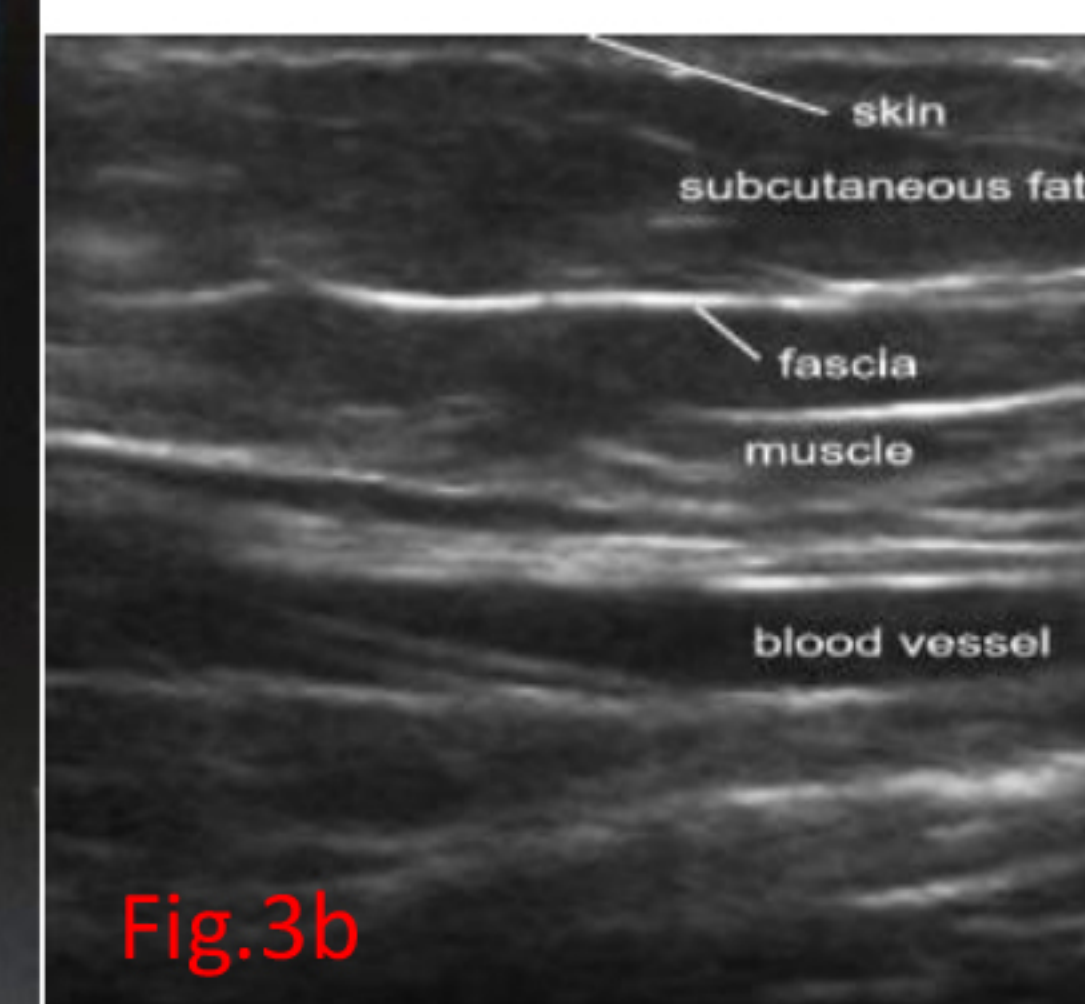


Fig. 3a: Site of swelling - heterogenous area; Fig.3b: represents ultrasonographic soft tissue impression of a normal area



After 7 days (Fig.4), apart from the swelling, paresthesia & drooping of right half of upper lip was also evident. All ophthalmological tests were normal. Next day the patient took discharge with a schedule of follow up.



Fig.4: Day seven



Fig.5: Six month follow

The swelling totally abolished, eye opened fully in 1 month. The drooping & paresthesia improved completely in 4 months and kept under observation for 6 months.

DISCUSSION

Ingestion of formalin- 50-100mL leads to fatal consequences. Effect of formalin in oral tissue^{1,9,10,11} & that for sodium hypochlorite⁷, chlorhexidine⁸ also have been reported. The management protocol is almost same. Immediate surgical drainage in this case would have helped in quicker healing as in case report of Dandriyal et al¹. In absence of enough evidence, subsequent surgical management was not

planned. However the prolonged presence of paraesthesia signify some temporary damage to sensory nerve ending, as the infraorbital block was not proper, from which the patient recovered completely.

The most common cause of such type of unfortunate happening being the malpractice of using old local anaesthetic bottles for storing such chemicals without labelling. Local anesthetic agent should preferably be used through cartridges rather than bottles.

CONCLUSION

Local Anesthetic is very basic to the practice of dentistry, particularly Endodontics. Utmost care & precaution should be taken when injecting local anesthetics to avoid such unfortunate incidents. Few such untoward happenings may be lessons for the future.

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