What are the causes of a perforated nasal septum?

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Perforation of the nasal septum is a clinical condition which occurs due to local trauma, cocaine sniffing, post-operatively (such as after sub-mucous resections) and in association with granulomatous diseases such as Wegener's granulomatosis. It has also been reported following intranasal steroid therapy.

Perforation, proceeded by ulceration, is also a well recognized occupational hazard. Legge reported ulceration and perforation in chrome platers as early as 1902, other occupational causes have been reported such as mercury fulminate, arsenic and cement. Nasal ulceration has also been reported following exposure to ruthenium and platinum salts but it is in chrome platers that the condition has been most closely studied.

Hunter described the time interval from first exposure to the development of ulceration and perforation in platers as being between 6 – 12 months although ulcers have also been reported after only a few days of plating work. The earliest reported time interval between exposure and perforation is just a few weeks.

The development of ulceration and perforation is thought to be due to the inhalation of hexavalent chromic acid mist. The mist touches the delicate nasal mucosa at Littles area producing inflammation and erosion/ulceration. This produces symptoms of a sore nose, of actual pain, irritation, rhinorrhea and nasal bleeding. If exposure is then controlled the ulcer heals with scabbing leaving a permanent scar which is asymptomatic. Continued exposure leads to perforation when the symptoms may cease. Workers with perforations can be asymptomatic and unaware of the 'hole' in their noses but others complain of rhinorrhea on eating spicy food and of whistling. Rarely psychological disturbance associated with body image can occur. Septal perforations are permanent; surgery maybe undertaken to close the hole and so prevent whistling but surgeons may require that individuals leave the industry before the operation in order to avoid perforation of the implant.

The finding of a perforation in the nose of a chrome plater is likely to be associated with the presence of permanent 'chrome holes' on the hands and forearms.

It is possible that workers inadvertently contaminate their own noses through direct contact of chromic acid on fingers with the mucosa. Low hygiene standards and nose picking have been reported as common within the industry probably due to the irritating nature of the hexavalent chromic acid mist.

Nasal septum perforation is reportable in the UK under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) and is a prescribed disease attracting industrial injuries benefit.

The condition can be prevented by control of chromic acid mist, good hygiene and by prompt action should individuals present with symptoms of possible ulceration. An effective health surveillance programme is therefore a key element in worker protection. A tradition of routine examination of the nose existed for 42 years following the first legislation regarding plating, although in 1973 the concept of the ‘responsible person’ carrying out skin inspections was developed and persists in many companies to the present day.

Prevention of nasal perforations is through:

- substitution of trivalent for hexavalent chromium;
- control of the chromic acid mist;
- maintenance of good personal hygiene and
- correct use of personal protective equipment.

Additionally platers sometimes use 'platers ointment' a mix of lanolin and soft white paraffin which is applied to the septum and which acts like a barrier cream — its effectiveness has not been proven but it has been used for decades in the industry and has its supporters.

REFERENCES


