

The methods of treatment of an ingrown toenail

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Abstract

An ingrown toenail is an inflammatory process occurring as a result of ingrowing medial or lateral edge of the nail into the nail bed. There are various causes of this ailment. The most common are: wearing poorly fit footwear causing pressure on the nail bed from the outside, improper trimming of toenails, hereditary susceptibility, trauma, hidrosis, presence of a background systemic disease (e.g. obesity, diabetes), onychomycosis and some medicines (applied in psoriasis and protease inhibitors).

The treatment depends on the progression of the ailment (preservative or surgical methods).

The clinical analysis involved 156 patients suffering from an ingrown toenail and treated from the year 2000 until September 2005 in The Clinic of Thoracic Surgery, General Surgery and Oncology of Clinical University Hospital No. 2.

The group included 115 males (74% of patients) and 41 females (26% of patients). The age of patients differed from 25 to 68 years (on average 43 years). We performed 174 operations of marginal resection of the nail and phenolisation of the matrix among 156 patients. 7 patients underwent the procedure on both sides and 4 patients in two toenails.

The healing time of the postoperative wounds was 14-18 days. The recurrence of the ailment was found in 4 patients (2.5% of patients). There were no complications such as excessive bleeding or postoperative infection in the study group. The marginal resection of the nail connected with phenolisation of the matrix is a good method of treatment of an ingrown toenail as it causes few recurrences and complications.

Key words: marginal resection, phenolisation.

An ingrown toenail is an inflammatory process occurring as a result of ingrowing medial or lateral edge of the nail into the nail bed. There are various causes of this ailment. The most common are: wearing poorly fit footwear causing pressure on the nail bed from the outside, improper trimming of toenails, hereditary susceptibility, trauma, hidrosis, presence of a background systemic disease (e.g. obesity, diabetes), onychomycosis and some medicines (applied in psoriasis and protease inhibitors).

Main symptoms which bother the patient and convince him to visit the doctor are: pain, oedema and erythraemia of the toe.

The treatment depends on the progression of the ailment. Firstly it is recommended to apply preservative treatment such as gentle elevation of the nail plate on the side of the ingrown toenail and putting a little cotton swab between the infected nail fold and the nail, soaking feet and proper trimming of nail plates. In more advanced cases we apply surgical treatment such as the Quenu method and phenolisation.

Material and methods

The clinical analysis involved 156 patients suffering from an ingrown toenail and treated from the year 2000 until September 2005 in The Clinic of Thoracic Surgery, General Surgery and Oncology. The group included 115 males (74% of patients) and 41 females (26% of patients). The age of patients differed from 25 to 68 years (on average 43 years). The surgical procedures were performed in an outpatient's clinic using an Oberst method of anaesthesia (1% lignocain). The procedure was a marginal resection of a nail plate with phenolisation of the matrix. After anaesthetizing the toe we put a stasis at the basis of it in order to induce ischemia. Next we resected the 4 mm marginal part of the nail plate on the ingrown side. The bare part of the matrix, especially under the nail fold was covered with a thin wooden cotton-tipped applicator soaked in 90% phenol, which was left there for about 8-10 minutes. After removal the wound was covered with antiseptic ointment and a gauze, aseptic dressing and the stasis was then removed.

Results

In the Clinic 174 surgical procedures of marginal resection of the nail plate with phenolisation of the matrix were performed among 156 patients. 7 patients underwent the procedure on both sides and 4 patients in two toes. The bleeding after removing the stasis was minimal. The patients had reported pain for a few more hours. There was no need to immobilise the patients and they gained a full activity the next day. The healing time of the postoperative wounds was 14-18 days. The recurrence of the ailment was found within 4 patients (2.5% of patients).

Discussion

Ingrowing of a toenail concerns usually the hallux, however, it may occur also among other toes or one toe on both sides. More often the changes regard the lateral side of the nail fold [1, 2]. In the study group the changes concerned the hallux in 140 patients (90%) and in 16 patients (10%) other toes. 7 patients had to undergo the procedures on the hallux on both sides. 65% (101 patients) of patients who reported to the Clinic had the changes on the lateral side of the nail fold.

The process of ingrowing of the toenail is a result of expanding of the nail plate in width influenced by inside and outside factors. It irritates the nail fold and causes microabrasions of the skin and consequently deeper penetration into the soft tissue. There is an inflammatory process growing there worsening the injury of the nail fold because of the increasing pressure of the swollen tissue on a sharp nail plate.

Prevention of the ingrown toenails means trimming the nail in a straight way or leaving longer edges, wearing proper footwear and a proper foot care.

There is a preservative and surgical treatment of an ingrown toenail. The recurrences occur in over 20% of cases [1, 3, 4].

A widely applied method of a surgical treatment is the resection of the nail plate or a partial resection including the matrix (e.g. Quenu method). These procedures were very injurious and gave a bad cosmetic effect, the patient was immobilised for a few days and the recurrences occurred in approximately 25% of cases when the Quenu method was applied and in about 70% cases of removing of the whole nail plate [2, 5]. Nowadays it is recommended to apply a marginal resection of the nail plate with the matrix ablation, which involves usage of different chemical substances (90% phenol, 10% caustic soda) or other procedures such as lasertherapy or cryotherapy. The recurrences after such treatment occur in 2-8% cases [1, 2, 6]. In the study group we performed marginal resection of the nail plate with matrix phenolisation. The recurrences of the ailment were found in 4 patients (2.5%) which corresponds with the literature data. During the procedure it is vital to limit the bleeding as blood inactivates phenol and restricts the contact of the applicator with the nail matrix [3, 4]. Phenol causes denaturation of the protein and has an antibacterial and anaesthetic effect so before using it, it is important to secure surrounding soft tissues by applying for example vaseline [1, 5].

In the study group there were no such complications as excessive bleeding or postoperative infection. However, the literature reports that they may occur in approximately 7% of patients treated with this method and with patients treated with other methods (complete resection of the nail plate, partial resection with matricectomy) they may reach even 41% [3, 5].

Conclusions

On the basis of our research we can claim that the marginal resection of the nail plate with phenolisation of the matrix is an effective method of treatment of an ingrown toenail causing few recurrences and complications.

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