

Idiopathic Scrotal Calcinosis Treated with a Combination of Surgical Excision and Carbon Dioxide Laser

Ryotaro TORAI, Teruhiko MAKINO and Tadamichi SHIMIZU

Department of Dermatology, Graduate school of Medicine and Pharmaceutical Sciences, University of Toyama, Sugitani 2630, Toyama 930-0194, Japan. E-mail: tora123@med.u-toyama.ac.jp

Submitted Nov 28, 2024. Accepted Dec 17, 2024

Published Jan 14, 2025. DOI: 10.2340/actadv.v105.42598. Acta Derm Venereol 2025; 105: adv42598.

To the Editor;

Idiopathic scrotal calcinosis (ISC) is a rare benign scrotal skin disease, which was first described by Lewinski in 1883 (1). It is characterized by asymptomatic yellowish-white nodules composed of calcium and phosphate deposits in the scrotal skin without any systemic abnormalities of calcium or phosphorus metabolism. We herein describe a case of ISC that was successfully treated with a combination of surgical excision and carbon dioxide laser with a computerized scanner.

A 21-year-old man presented to our hospital for the evaluation of a 3-year history of multiple nodules on his scrotum. There was no family history of similar symptoms. The patient had no history of scrotal trauma. A physical examination revealed hard yellowish-white nodules, measuring 1–15 mm in size, on the scrotum (**Fig. 1A**). A histological examination revealed several cysts with either internal keratinization or calcified lesions in the dermis

(**Fig. 1E, F**). The patient's blood test results were within normal limits. These findings were diagnostic for ISC.

Several large nodules, measuring > 5 mm in size, were surgically excised and directly closed (**Fig. 1B**). After surgery, multiple small nodules, measuring ≤ 5 mm in size, were treated with a carbon dioxide laser with a computerized scanner (LASER 30C, Lumenis Inc., Yokneum, Israel) under local anaesthesia. The setting used was 3 W with a 0.9-mm spot size in “drilling” mode (**Fig. 1C**). Consequently, the multiple nodules completely disappeared (**Fig. 1D**). No post-treatment complications were observed and there has been no recurrence for 18 months.

Surgical excision and direct closure or use of flaps/grafts is nowadays the most common therapeutic approach for ISC. However, surgery-related complications are often experienced such as reduction of the scrotal

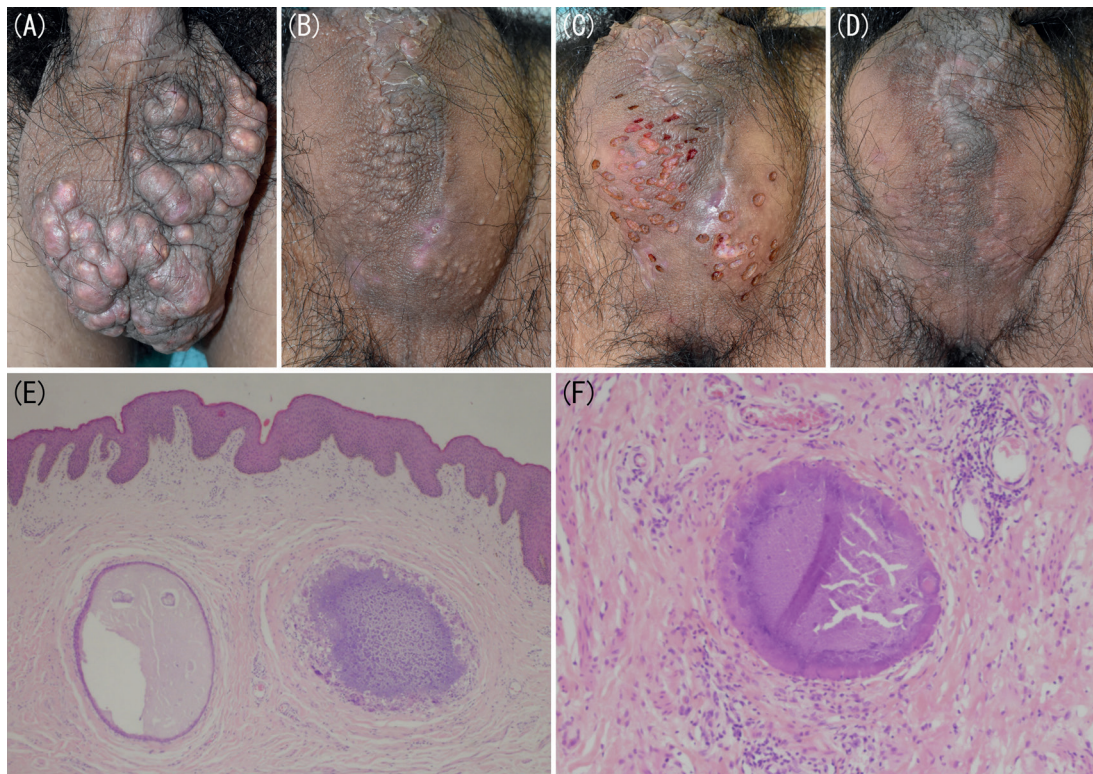


Fig. 1. (A) Hard yellowish-white nodules, measuring 1–15 mm in size, on the scrotum. (B) Multiple small nodules remained after surgery. (C) After treatment with a carbon dioxide laser with a computerized scanner. (D) The multiple nodules completely disappeared. (E, F) A histological examination revealed several cysts with either internal keratinization or calcified lesions in the dermis.

volume, significant scarring, bleeding, or infection, so a less invasive procedure with minimal tissue loss and a good aesthetic outcome is needed (2).

There have been 2 reports of ISC treated with carbon dioxide lasers only (3, 4). According to these reports, a carbon dioxide laser can remove the nodal lesion itself more accurately than surgical excision, with less bleeding; however, one disadvantage of carbon dioxide laser treatment is the formation of a deep scar. In contrast, a carbon dioxide laser with a computerized scanner generates a continuous focused beam of laser energy that moves rapidly across an area of skin with the aid of the computerized scanner, resulting in less scarring. Scarring is rarely a problem when small nodules are treated with the carbon dioxide laser, but can be a problem for large nodules. To our knowledge, this is the first report of ISC treated with a combination of surgical excision and carbon dioxide laser with a computerized scanner. In our case, the large nodules were clustered in the middle of the scrotum and the small nodules were scattered over a wide area of the scrotum, so a combination of surgical excision and carbon dioxide laser with a computerized scanner was considered the appropriate treatment.

The combination of simple excision and carbon dioxide laser with a computerized scanner presented here has an excellent healing tendency and is expected to achieve good functional and aesthetic results for the scrotal skin. Accordingly, we hypothesized that it is expected to be a useful therapeutic option for this disease.

REFERENCES

1. Lewinski HM. Lymphangiome der Haut mit verkalktem Inhalt. Virchows Archiv fur pathologische anatomie und Physiologie und fur klinische Medizin 1883; 91: 371–374. <https://doi.org/10.1007/BF01925688>
2. Akinboro AO, Onilede DA, Babatunde TO, Oiwoh SO, Suleiman OA, Olabode OP. Idiopathic scrotal calcinosis: report of 2 cases, and review of pathogenesis and factors that determine patients' acceptance of surgical treatment. Clin Cosmet Investig Dermatol 2018; 11: 333–337. <https://doi.org/10.2147/CCID.S142101>
3. Cannarozzo G, Bennardo L, Negosanti F, Nisticò SP. CO₂ laser treatment in idiopathic scrotal calcinosis: a case series. J Lasers Med Sci 2020; 11: 500–501. <https://doi.org/10.34172/jlms.2020.79>
4. Najar Seyf A, Alenmyr L. Scrotal calcinosis treated with carbon dioxide laser: two cases and a short literature review. Acta Derm Venereol 2021; 101: adv00444. <https://doi.org/10.2340/00015555-3801>