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# Subungual chondroma in a teenager

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## Abstract

Soft tissue chondroma is a rare benign tumor that occurs more often in the distal limbs and is unattached to the underlying bone. An 11-year-old boy, presented with a nodule of the subungual area of the right big toe. Objectively, the nail plate was partially destroyed owing to protrusion. Digital dermoscopy revealed yellow keratinous masses in the subungual area, with fibers adhering to the surface. Post-traumatic hemorrhages were observed in the tumor. Owing to functional discomfort, the patient underwent removal of the mass under local anesthesia. The histological picture is consistent with subungual soft tissue chondroma. Subungual soft tissue chondroma is more common in adults, but can affect people of all ages.

*Keywords: chondroma, diagnostic, treatment, tumor*

## Introduction

Soft tissue chondroma is a rare benign tumor that occurs more often in the distal extremities. This cartilaginous growth is unattached to the underlying bone and is more common in middle-aged patients, mainly occurring on the fingers [1]. In the case of subungual localization, the tumor grows, deforming and gradually destroying the nail plate [2]. This leads to aesthetic and subsequently functional discomfort, causing patients to seek specialized care. Additional examination methods such as X-ray, optical and ultraviolet-induced fluorescence dermoscopy can also be used. Ultraviolet-induced fluorescence dermoscopy (UVFD) is a new and improved method

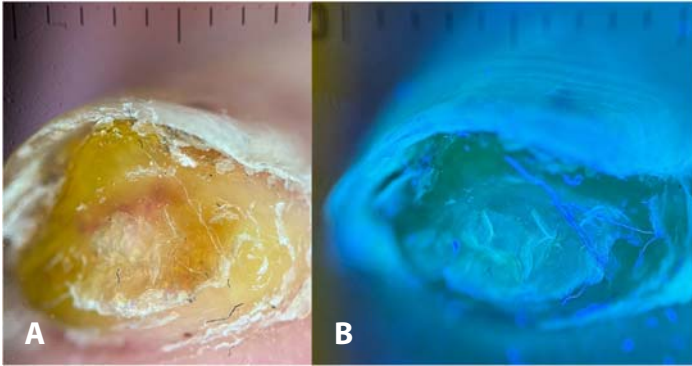
of examining the surface layers of the skin using UV radiation. Scientific data on the usefulness of the method is still accumulating [3]. In the available literary sources, there is information on the use of optical dermoscopy in the diagnosis of subungual exostosis. However, data on the use of UVFD are not present [4]. The article provides a description of a clinical case of this pathology.

## Case Synopsis

An 11-year-old boy, presented with a 6-month history of nodule of the subungual area of the right big toe that was gradually growing in size. Objectively, the nail plate was partially destroyed owing to a protrusion that pushed upwards (**Figure 1A**). Digital dermoscopy showed yellow keratinous masses with fibers adhering to the surface in the subungual area (**Figure 1B**). Post-traumatic hemorrhages were formed in the tumor (**Figure 2A**) and UVFD showed a white-blue glow of keratinous masses and adherent fibers (**Figure 2B**). X-ray



**Figure 1. A)** An 11-year-old boy with nodule in the subungual area, pushing back and partially destroying the nail plate. **B)** Digital dermoscopy with FotoFinder Medicam 1000s camera, Polarization Mode, 20x. Yellow keratinous masses with fibers adhering to the surface in the subungual area.



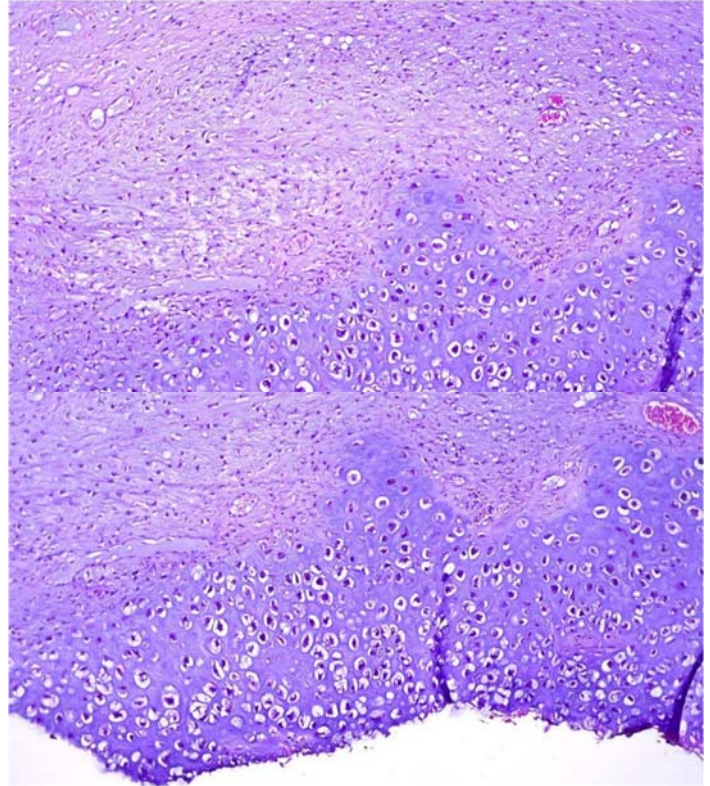
**Figure 2. A)** Optical dermoscopy DermLite DL5 Polarisation Mode, 20×. Post-traumatic hemorrhages were formed in the tumor. **B)** Ultraviolet-induced fluorescence dermoscopy DermLite DL5 20×. White-blue glow of keratinous masses and adherent fibers.

diagnostic data revealed no connection between the lesion and the bone apparatus of the toe.

Owing to the functional discomfort, the patient underwent removal of the tumor under local anesthesia, using a combination of shave biopsy and electrosurgery. The pathohistological tissue sample was repositioned with a fragment of the nail plate with a part of the underlying nail bed and soft tissues. The soft tissue sample showed myxomatosis, focal chondrogenesis and accumulation of immature chondrocytes located in the thickness of the chondroid matrix (**Figure 3**). The wound healed uneventfully. The nail plate grew back over time and covered the area of the previous intervention.

## Case Discussion

The subungual localization of the tumor often causes significant discomfort for the patient owing to the destruction of the nail plate and protrusion that interferes with shoe wear. Risk of infection is also a concern. However, the localization to the subungual area make surgical treatment difficult. Therefore, it is important to establish the fact of benignity, which will allow the use of destructive techniques for gentle removal of the mass and reduce the duration of the postoperative recovery period. Classical dermoscopic examination provides additional differential diagnostic data regarding the degree of blood supply and structure of the lesion, and signs of an infectious origin. In certain clinical situations, the



**Figure 3. H&E histopathology, 20×. Micropreparation of the sample obtained from the subungual area. Myxomatosis, focal chondrogenesis and accumulation of immature chondrocytes located in the thickness of the chondroid matrix.**

boundaries of the tumor are better visualized with UVFD than with routine dermoscopy and can serve as a tool to clarify the scope of future surgical intervention.

## Conclusion

Subungual soft tissue chondroma is a rare benign tumor that occurs more often in adults, but can affect people of all ages. Additional investigations, such as dermoscopy and UVFD, can provide valuable information for the differential diagnosis of subungual masses and planning of surgical intervention. This article shows the first use of UVFD for this pathology. Gentle surgical treatment shortens the patient's recovery period.

## Potential conflicts of interest

The authors declare no conflicts of interest.

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