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# Malignant Cartilage Lesions of the Hand: When Enchondromas Go Bad

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## Introduction

- Most cartilaginous lesions of the hand are small and benign and can be managed with observation or local curettage and grafting<sup>1</sup>
- Enchondromas are the most common bone tumor of the hand and can present with pain or pathologic fracture<sup>1</sup>
- Malignant transformation occurs at higher rates in patients with multiple enchondromas, but is rare in solitary lesions<sup>2</sup>
- The histology of chondrosarcoma mimics enchondroma<sup>3</sup>
- It is important to note the clinical presentation of potential malignant transformation of enchondromas
- We present a case series of malignant cartilaginous tumors of the hand and describe their presentation and clinical course

## Case #1

- 90 year old male noted a slowly progressive, growing mass at the proximal phalanx of the little finger associated with decreased range of motion
- Previously had small stable mass in the area for a number of years
- Radiographs demonstrated an expansile mass with cortical disruption (Figure 1A)
- Magnetic resonance imaging (MRI) revealed a transcortical soft tissue mass (Figure 1B)
- Initial biopsy inconclusive for enchondroma vs low grade cartilaginous tumor
- Treated with a 5<sup>th</sup> ray amputation, final pathology revealed chondrosarcoma (low grade)



Figure 1A. PA and lateral radiographs of the right hand demonstrating an expansile mass of the little finger proximal phalanx with cortical disruption

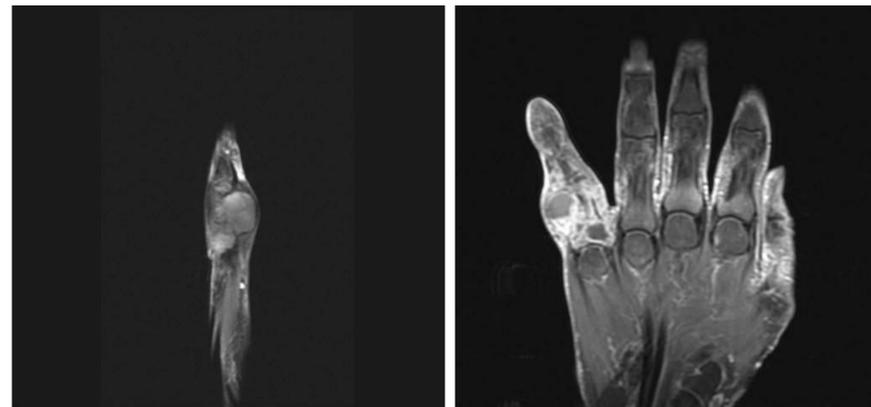


Figure 1B. MRI of the right hand, sagittal fat sat pre-contrast (left) and coronal T1 fat sat post-contrast (right) showing associated soft tissue mass.

## Case #2

- 54 year old female presented with progressively enlarging mass of the right ring finger distal phalanx
- Area became intermittently painful, and enlarging after remaining stable and painless for years
- Radiographs revealed a lucency with calcification within the distal phalanx (Figure 2A)
- MRI showed a periosteal reaction, cortical breakthrough and a soft tissue mass (Figure 2B)
- Treated with a mid-middle phalanx amputation
- Pathology revealed low to intermediate grade chondrosarcoma



Figure 2A. PA and lateral radiographs of the right ring finger showing bony erosions of the distal phalanx and calcifications within the soft tissue

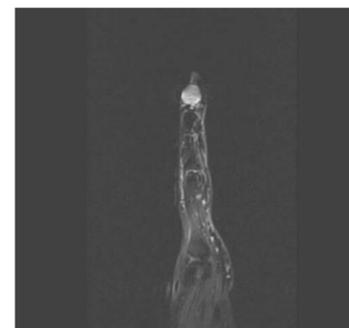


Figure 2B. MRI sagittal T2 fat sat image showing cortical disruption and soft tissue mass.

## Case #3

- 19 year old female with Ollier's disease presented for follow up with increased pain and swelling of the index finger of the left hand
- Worsening hand function due to enlarging lesion of the proximal phalanx
- Radiographs showed a large lucent lesion without fracture or cortical disruption (Figure 3)
- Ray amputation performed due to dysfunction and growth index
- Pathology revealed low grade chondrosarcoma



Figure 3. PA and lateral radiographs of the left hand showing multiple enchondromatosis and large lucent lesion of the proximal phalanx of the index finger.

## Conclusion

- All 3 patients had malignant transformation of an enchondroma, only one patient having history of multiple enchondromas
- All had progressive growth in a previously stable lesion and increasing pain related to the lesion
- Common imaging findings included cortical irregularity and soft tissue mass
- An enchondroma diagnosis necessitates follow-up especially when the clinical appearance or amount of pain is changing
- Although rare, it is important to be aware of the signs of malignant transformation of benign cartilaginous lesions

## References

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