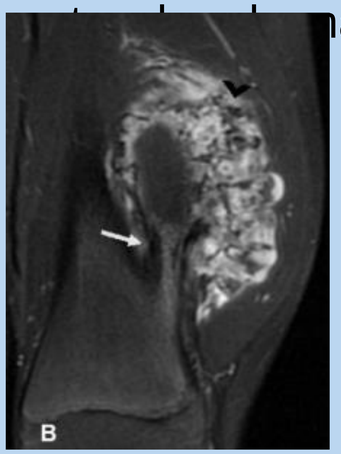
S22 Spontaneous Regression of Osteochondroma in Pediatric Patients

Objectives

1. Describe how the spontaneous regression of osteochondroma occurs in pediatric patients.
2. Compare the modalities on how they diagnose osteochondroma.



MRI T2 coronal shows a pedunculated osteochondroma (white arrow) (De Macedo Pontes et al., 2023).

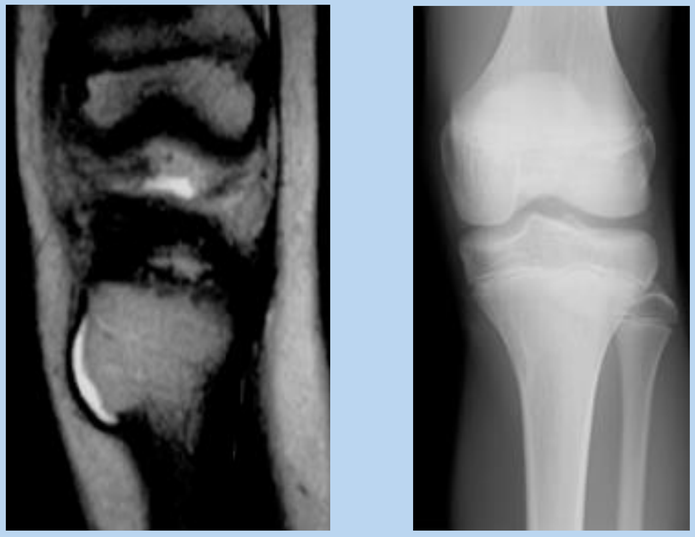
The spontaneous regression of osteochondroma

The *first case* of regressing osteochondroma was reported in 1835 by Scottish surgeon John Hunter.
Since then:

- Has been observed through radiological findings, with 23 reports between 1960 and 2014.
- In 1998, it was found to be more common in pediatric patients.
- Studies shown that resolution period varies from 6 months to 6 years.
- *The exact cause for this phenomenon remains unclear.*

Case Study

A six-year-old boy presented with progressively increasing pain in his left proximal tibia. A radiograph identified a pedunculated osteochondroma in the affected area. The patient was monitored to ensure the tumor did not continue to grow, with the use of MRI to show the cartilaginous cap was not becoming greater than the first measurement of 2.83 mm. After one month, he experienced a sudden relief of pain and remained asymptomatic for the following six years. A subsequent x-ray revealed that the tumor had completely disappeared after six years of being asymptomatic.



The thickness of the cartilage cap is shown in MRI when tumor was first diagnosed (left). After 6 years, the tumor resolved based on x-ray (right) (Adachi et

Imaging

X-ray: Osteochondromas appear as protuberances attached to the external surface of the bone.

- Can be either pedunculated (with a stalk) or sessile (without a stalk)
- Cannot determine if the tumor is benign or malignant

MRI: The use of magnetic fields and radio waves, provides detailed images and is the best method for imaging osteochondromas.

- The cartilage cap appears low on T1 and high on T2 images
- Gadolinium can also be used to assess malignant degeneration
- It can identify the thickness of a cartilage cap which helps determine the tumor's nature, with thicker caps potentially indicating malignancy

Conclusion

While radiographs play a crucial role in identifying osteochondromas, MRI scans are essential for assessing potential malignancy's by measuring the cartilage cap thickness. Advancements in diagnostic imaging have been beneficial in detecting rare occurrences such as the regression of osteochondroma, especially for pediatric patients.