AMSER Case of the Month May 2024

A 27 year old patient with bilateral wrist pain

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Patient Presentation

HPI: 27 y/o female with no significant medical history presents after she sustained burns to her bilateral thighs, bilateral feet, and bilateral hands. The patient reports she spilled heated oil on herself after a pan caught fire while cooking. During her hospital course, she continued to endorse bilateral wrist pain but preserved range of motion.

Patient Presentation Continued

- Past Medical History: Denies
- Past Surgical History: Colposcopy
- Social History: Denies tobacco or alcohol use. Endorses marijuana use
- Daily Medications: Denies
- Vitals: Stable, unremarkable
- Pertinent Labs: unremarkable

Physical Exam at ED Presentation

General: No acute distress, alert and oriented x 4

Bilateral Upper Extremities

- Deep partial thickness burns to the right hand with concern for circumferential burns to the digits but not the hand
- Third degree burns to the left hand with concern for circumferential burns to the digits but not the hand

Physical Exam When Patient Continued to Endorse Wrist Pain During Hospital Stay

General: No acute distress, alert and oriented x 4

Bilateral Upper Extremities:

- Full range of motion of the bilateral wrists
- Swelling, erythema, or edema are not appreciated bilaterally

What Imaging Should We Order?

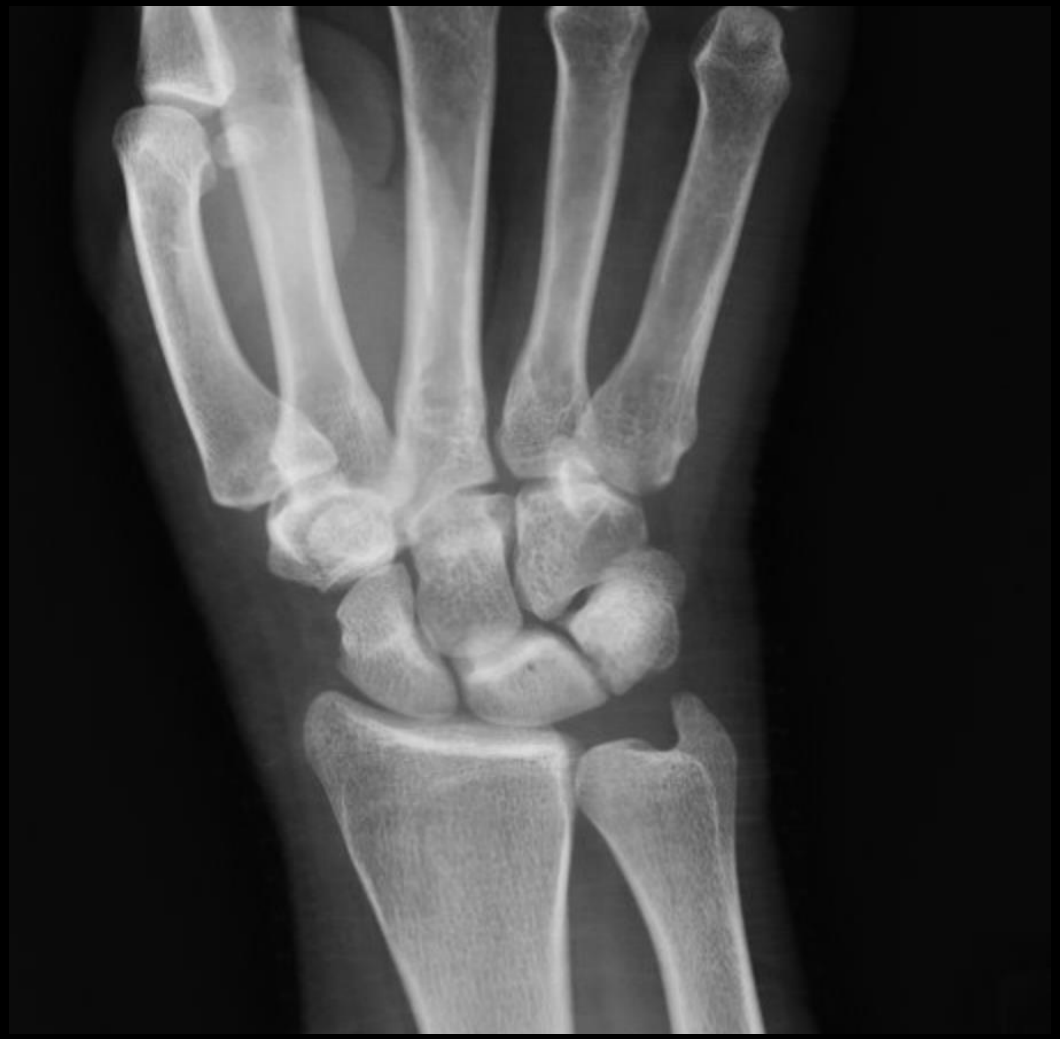
Select the applicable ACR Appropriateness Criteria

Variant 1: **Acute blunt or penetrating trauma to the hand or wrist. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
Radiography area of interest	Usually Appropriate	Varies
CT area of interest with IV contrast	Usually Not Appropriate	Varies
CT area of interest without and with IV contrast	Usually Not Appropriate	Varies
CT area of interest without IV contrast	Usually Not Appropriate	Varies
MRI area of interest without and with IV contrast	Usually Not Appropriate	O
MRI area of interest without IV contrast	Usually Not Appropriate	O
Bone scan area of interest	Usually Not Appropriate	☢☢☢
US area of interest	Usually Not Appropriate	O

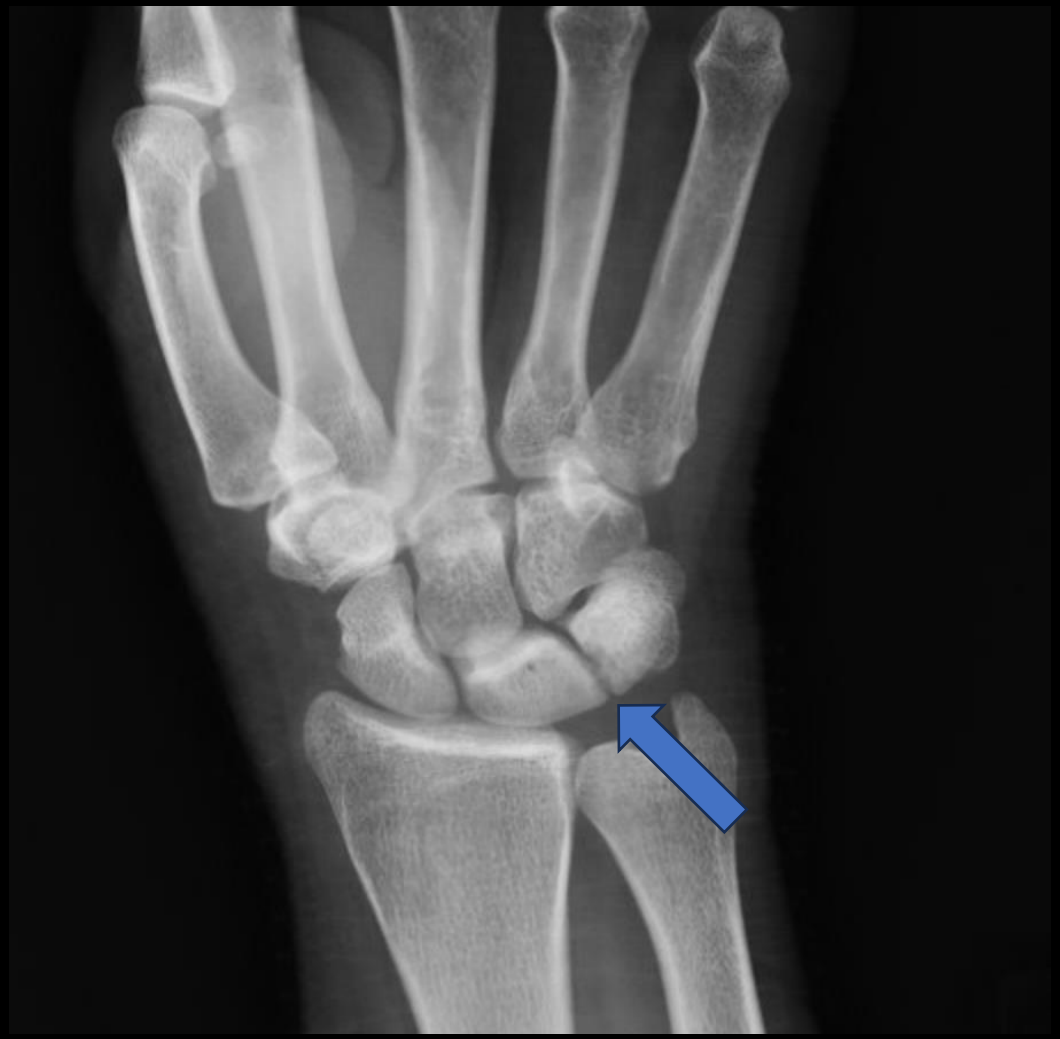
Ordered by Attending Physician

Findings: (unlabeled)



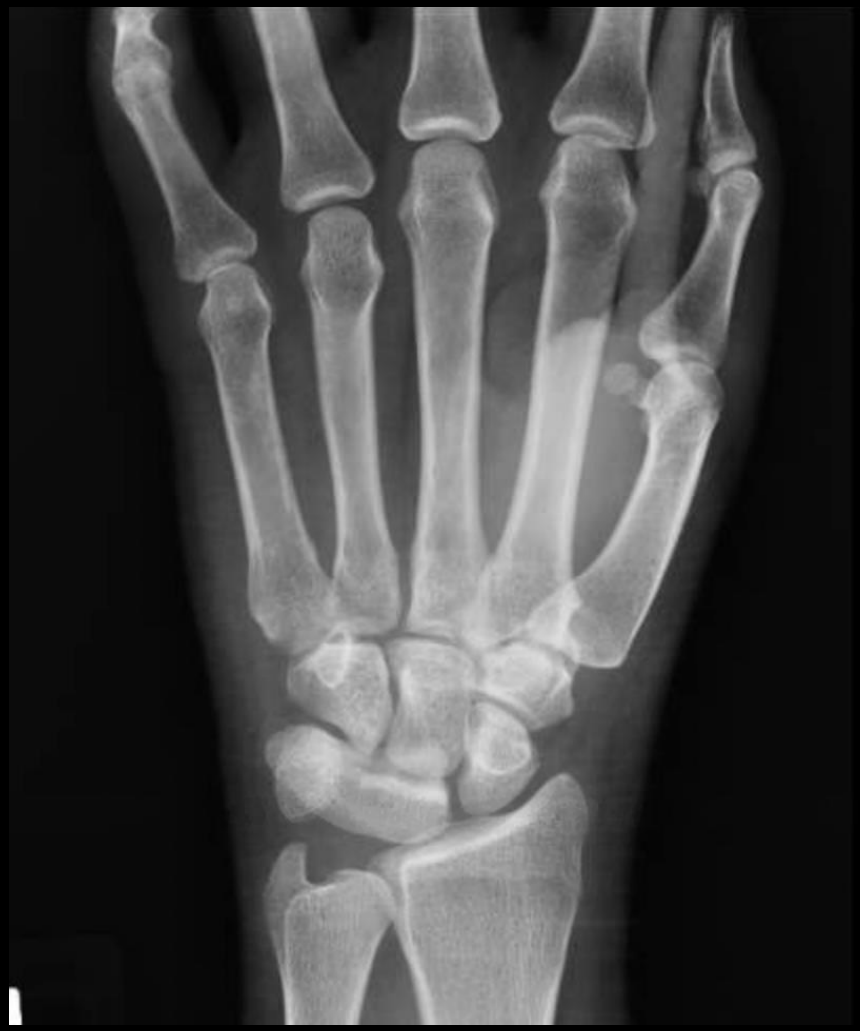
PA Wrist (Right)

Findings: (labeled)



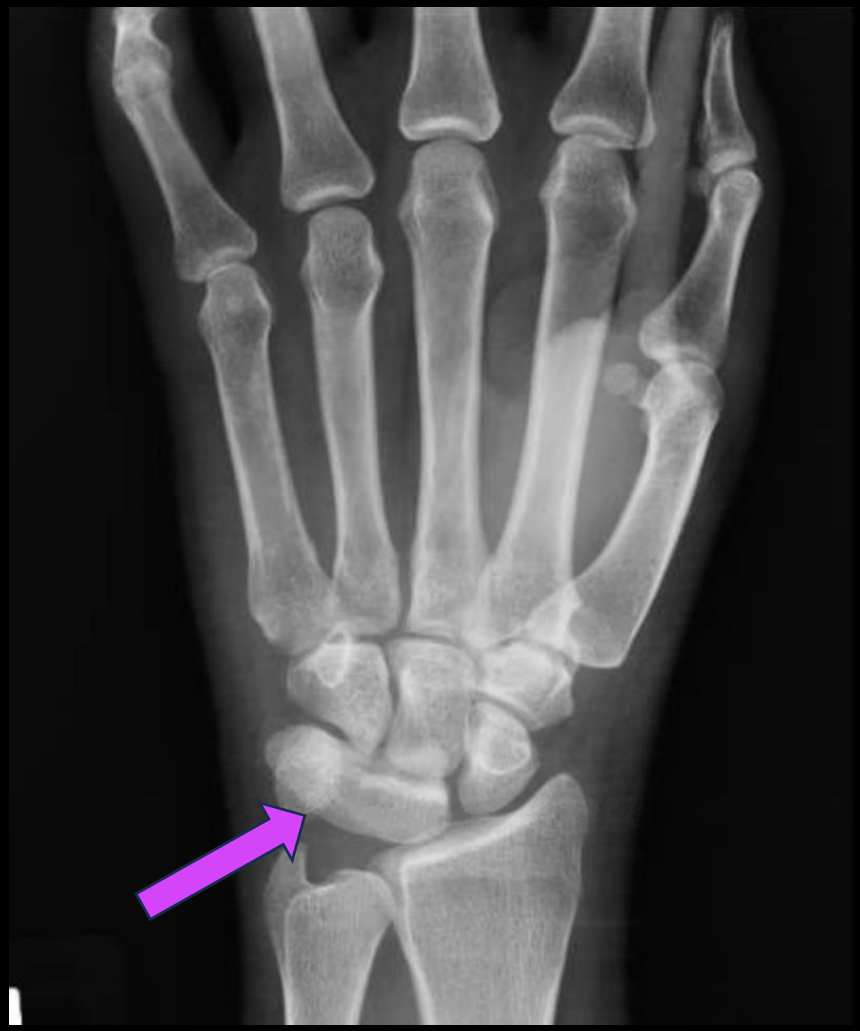
Lunotriquetral Fibrous Coalition
(Incomplete coalition) (blue arrow)

Findings: (unlabeled)



PA Wrist (Left)

Findings: (labeled)



Lunotriquetral Synostosis (Complete Coalition)
(pink arrow)

Final Dx:

Congenital Lunotriquetral Fibrous Coalition (Right) and Lunotriquetral Synostosis (Left)

Case Discussion

- Carpal Coalitions are an uncommon congenital anomaly with an estimated incidence of 0.1%. These cases are seen in much lower frequency than the similarly related tarsal coalitions which are found in approximately 1-2% of the general population. Females are twice as like to have this condition than males.
- Most commonly, coalition occurs between the lunate and triquetrum
- They may occur as osseous coalitions (synostosis) or non-osseous coalitions where carpal bones are connected by cartilage or fibrous tissue.
- Colloquially, osseous coalitions have been referred to as complete coalitions which are more likely to be asymptomatic and found incidentally while non-osseous coalitions have been referred to as incomplete coalitions and are more likely to present symptomatically as the layer of articular cartilage present may predispose the patient to degeneration or fracture.

Case Discussion

- This finding can occur in isolation, in association with particular syndromes including diastrophic dwarfism, dyschondrosteosis, Ellis van Creveld syndrome, fetal alcohol syndrome, hand-foot-genital syndrome, Holt-Oram syndrome, and Turner syndrome or in connection with inflammatory arthropathies such as rheumatoid arthritis, juvenile arthritis or psoriatic arthritis.
- Syndromic coalitions tend to involve multiple carpal bones and may cross carpal rows.
- Asymptomatic or mildly symptomatic cases can be treated with conservative management consisting of splinting, NSAIDs, physical therapy, and steroid injections.

Case Discussion

- Severe pain refractory to conservative management may necessitate surgical intervention.
- Lunotriquetral arthrodesis has been reported most commonly in the literature but with fairly high complication rates. Wrist range of motion is often limited postoperatively with this particular procedure.
- Arthroscopic resection of the symptomatic coalition with lunotriquetral debridement have been described and may serve as a viable option for surgical treatment.

References:

Chiri W, Bain GI. Arthroscopic Resection of Lunotriquetral Coalition. Arthrosc Tech. 2022 Apr 21;11(4):e491-e495. doi: 10.1016/j.eats.2021.11.022. PMID: 35493054; PMCID: PMC9051617.

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