the previous fracture site. It could be explained by the new bone formation in the metaphysis following the initial injury, entrapping the tendons. Also, we examined the patient six months after his injury, when the elongation of the metaphyseal bone could have possibly made the tendons’ entrapment to appear more proximal to the fracture site.

Regarding the diagnosis of this rarity, it should be differentiated from radial nerve injury, Volkmann’s syndrome, or tendon contracture/stiffness unrelated to the fracture. To identify, whether the tendon has been engulfed near the fracture site, due to new-born tissue related to the healing process, or is passing through the bony fragments, a thorough clinical examination and a magnetic resonance imaging scan may be of help. Plain radiographs can be indicative of entrapment, as in the reported case, with a visible bone tunnel. Post-traumatic cystic lesions, although rare, have been reported and must be differentiated. Painless restriction of passive finger extension shortly after application of a cast, and nerve palsies that persist on follow-up even after rigorous hand therapy require further investigation.

In the reported case, the fracture was also complicated by growth arrest of the distal radial growth plate. This complication is probably associated with the amount of energy that passed through the growth plates during the injury. It is known that the K-wires used for fixation do not cause substantial damage to the physis. Growth plate arrest is a well-defined incident that can develop following significant energy passing through and damaging the physis cells. Physis arrest of the radius leads to an ulnar-positive variance at the wrist. If the developmental difference is symptomatic, treatment aims at accomplishing a level joint. In our case shortening and epiphysiodesis of the ulna were performed, along with epiphysiodesis of the intact portion of the distal radius. A corrective osteotomy for the palmar tilt of the radius was not performed, as the final correction will be decided if needed when the patient will be skeletally mature.

When dealing with decreased finger range of motion in the forearm region, a high level of suspicion is necessary. The orthopedic surgeon should always differentiate tendon entrapment from the more common Volkmann’s syndrome. Surgical exploration and release of the tendon from the involved area is the only option in such cases. Dissection near the bony and other newly-formed tissues can be challenging, and recognition of any adjacent neurovascular structures is essential before freeing the tendons. If there is a bony gap after the tendon release, bone grafting should be considered. When a growth plate injury is suspected, the patient and his parents should be informed regarding the potential complication and advised to be re-examined should any new symptoms or malalignment occur.

Conflict of interest
The authors declare no conflict of interest.

References

Table 1: Range of motion (ROM) and hand strength measurement with a Jamar Handgrip Dynamometer and Pinch Gauge of the patient two years after the second, and six months after the third operation. The first operation was the initial fixation of the fracture. We did not obtain any measurement soon after the second operation because the child was lost to follow-up. Measurement of ROM is in degrees and strength in kilograms.

<table>
<thead>
<tr>
<th></th>
<th>After 2nd operation</th>
<th>After 3rd operation</th>
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<tbody>
<tr>
<td></td>
<td>Left</td>
<td>Right</td>
</tr>
<tr>
<td>Wrist flexion</td>
<td>80</td>
<td>70</td>
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<tr>
<td>Wrist extension</td>
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<tr>
<td>Active wrist flexion</td>
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<tr>
<td>(reverse prayer position)</td>
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<tr>
<td>Active wrist extension</td>
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<tr>
<td>Wrist radial deviation</td>
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<td>Wrist ulnar deviation</td>
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<tr>
<td>Forearm Supination</td>
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<td>60</td>
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<tr>
<td>Pinch Strength</td>
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<tr>
<td>(thumb-index finger)</td>
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<td>Pinch strength</td>
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<td>(thumb-middle finger)</td>
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<td>Three fingers pinch</td>
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<td>strength</td>
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References