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Nonunion of the radial neck with localized swelling at the antecubital fossa mimicking a tumor

Radyus boynunda tümörü andıran kaynamama

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Abstract

Because nonunion of the radial neck is extremely rare in adults, we present a case of nonunion of the radial neck fracture with localized swelling at the antecubital fossa mimicking a tumor. She had no functional deficit and only mild pain with daily activities. The patient was treated with conservative methods. Six months later, the patient was pain-free, with full range of motion and resolution of the fullness in the antecubital fossa. The severity of patient symptoms and abnormality of elbow function should determine the choice of treatment for nonunion of radial neck fractures.

Key words: Fracture, Nonunion, Radius neck, Conservative treatment

Özet

Yetişkinlerde radius boyun kırığının kaynamama komplikasyonu son derece nadir görüldüğü için, dirsek eklemi ön bölümünde tümöre benzer şişlik ile beraber olan kaynamamış bir radius boyun kırığı olgusunu burada sunduk. Hastanın herhangi bir fonksiyonel kısıtlılığı yoktu ve günlük işlevleri sırasında yalnızca hafif ağrı olmasından şikayetçiydi. Hasta konservatif yöntemlerle tedavi edildi. 6. aydaki değerlendirmesinde ağrı şikayeti yoktu. Sol dirsek hareket genişliği tam olarak izlendi ve antekubital bölgedeki dolgunluk kaybolmuştu. Hasta şikâyetleri ve dirsek eklemindeki fonksiyonel bozukluğun boyutu kaynamamış radius boyun kırığının tedavisinde hangi yöntemin seçileceği hakkında belirleyici olmalıdır.

Anahtar sözcükler: Kırık, Kaynamama, Radius boyunu, Konservatif tedavi

Fractures of the radial head and neck make up 1.7-5.4% of all fractures. Of these, about 15% to 20% involve the radial neck.[1] Because nonunion of the radial neck is extremely rare in adults, we present a case of nonunion of the radial neck fracture with localized swelling at the antecubital fossa mimicking a tumor. X-ray, magnetic resonance imaging, 3-D computed tomography findings of the patient and treatment strategies for such cases are discussed in light of recent literature.

CASE REPORT

A 73-year-old woman presented to our outpatient clinic with complaints of localized swelling in the left antecubital fossa and mild elbow pain after vigorous activity. Eight months prior, she had fallen directly onto her elbow and had been treated at another hospital for a radial neck fracture with long arm cast immobilization for two months. On examination, there was swelling and fullness without tenderness in the left antecubital fossa and no pain with active/passive elbow movement. She could flex the elbow from 5 to 140 degrees and had 90 degrees pronation and supination of the forearm. Her neurological and vascular examination was normal.

Lateral (Figure 1) and anteroposterior (Figure 2) radiographs of the left elbow showed atrophic nonunion of the radial neck. Magnetic resonance imaging showed a high-intensity signal fluid collection with a regular boundary around the radial neck (Figure 3). On three-dimensional computed tomography reconstruction of the elbow, the atrophic nonunion of the radial neck was seen in details (Figure 4).

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Figure 1. Lateral radiograph of the nonunion of the radial neck.

Figure 2. Anteroposterior radiograph of the nonunion of the radial neck.

The patient was reassured regarding her diagnosis and because she had no functional deficit and onlyand anteroposterior (Figure 2) radiographs of the left elbow showed atrophic nonunion of the radial neck. Magnetic resonance imaging showed a high-intensity signal fluid collection with a regular boundary around the radial neck (Figure 3). On three-dimensional computed tomography reconstruction of the elbow, the atrophic nonunion of the radial neck was seen in details (Figure 4).

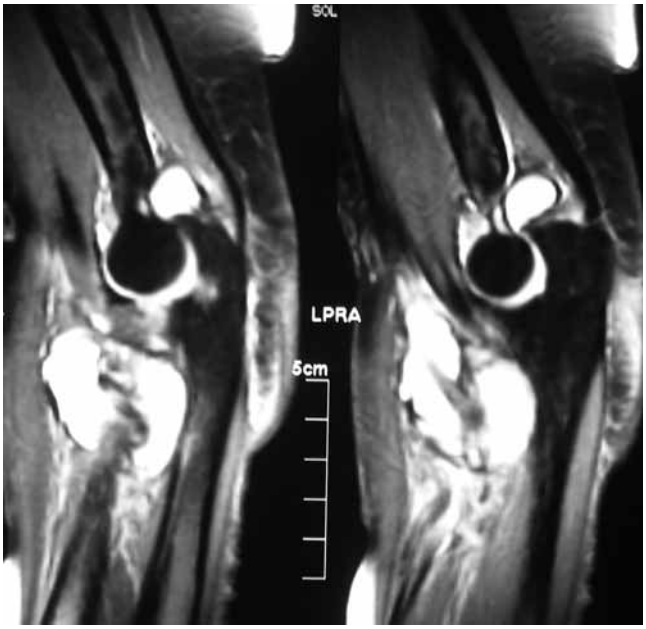

Figure 3. Fat-suppressed PD-weighted sagittal section showing a high-signal collection with regular boundary around the nonunion of the radial neck.

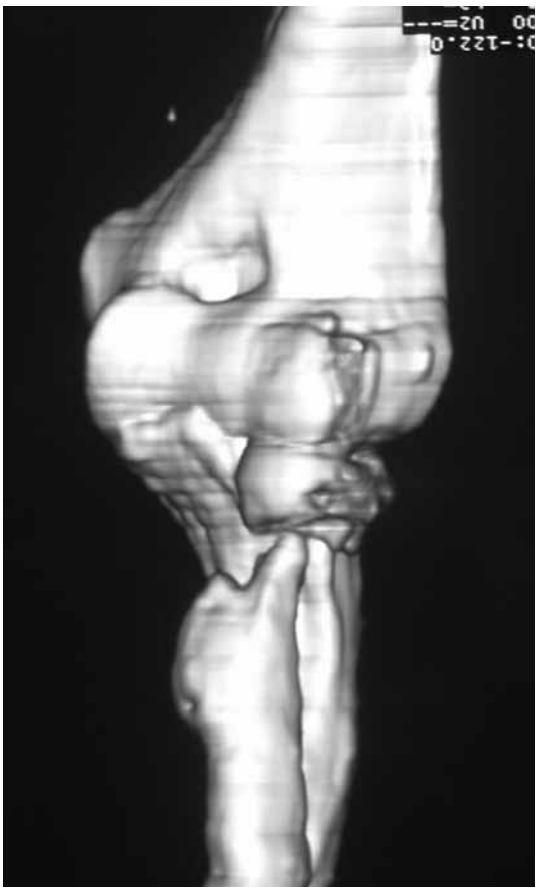

Figure 4. *Three-dimensional computed tomography reconstruction of the elbow.*

The patient was reassured regarding her diagnosis and because she had no functional deficit and only mild pain with daily activities, she received range of motion and muscle strengthening training with a physical therapist. Six months later, the patient was pain-free, with full range of motion and resolution of the fullness in the antecubital fossa. Appearance of the nonunion on elbow X-rays was unchanged at two years follow-up, also she had full range of motion at the left elbow without any complaint (Figure 5).

Figure 5: Anteroposterior and lateral radiographies of the nonunion of the radial neck at the last follow-up.

DISCUSSION

Nonunion of the radial neck is extremely rare and only a few cases in adults have been reported.[2-7] The patients in the case reports to date have not presented with elbow swelling which might be confused with a tumor. Patients with nonunion of a radial neck fracture who have minimal or no symptoms can be treated conservatively.[2,3,6,8] Without surgery, Horne et al.[5] obtained a satisfactory functional result in their patient with nonunion of the radial neck - the initial injury being a posterior elbow dislocation with concomitant comminuted fracture of the radial head and neck. Symptomatic nonunion of radial neck fractures are usually treated surgically, by bone grafting with internal fixation[7] or radial head excision.[4]

Nearly two months of immobilization with a long arm cast is normally more than adequate for union of a radial neck fracture – we are not sure why the nonunion occurred in our patient. Older age may have detrimental effect on bone union. Because of her minimal symptoms, we elected to treat her conservatively, which was successful as measured by her resolution of symptoms and signs six months later.

The severity of patient symptoms and abnormality of elbow function should determine the choice of treatment for nonunion of radial neck fractures. Conservative treatment with physical therapy may be preferred treatment of nonunion of radial neck fractures in minimally symptomatic elderly patients.

REFERENCES

1. Morrey BF. Radial head fracture. In: Morrey BF editor. The elbow and its disorders. Philadelphia, W. B. Saunders Company 2000:341-64.
2. Cobb TK, Beckenbaugh RD. Nonunion of the radial neck following fracture of the radial head and neck: case reports and a review of the literature. Orthopedics 1998;21:364-8.
3. Faber WA, Verhaar JA. Nonunion of radial neck fracture. An unusual differential diagnosis of tennis elbow: a case report. Acta Orthop Scand 1995;66:176.
4. Faraj AA, Livesly P, Branfoot T. Nonunion of fracture of the neck of the radius, a report of three cases. J Orthop Trauma 1999;13:513-5.
5. Horne G, Sim P. Nonunion of the radial head. J Trauma 1985;25:452-3.
6. Karpinski MRK. Ununited radial neck fracture (letter). Injury 1982;13:447-8.
7. Middleton RWD, Macmiles N. A report of case of nonunion following fracture of the head of the radius. Injury 1976;8:31-4.
8. Ring D, Psychoyios VN, Chin KR, Jupiter JB. Nonunion of nonoperatively treated fractures of the radial head. Clin Orthop 2002;398:235-8.