

Ultrasonographic evaluation of tendon injuries in hand trauma: a crucial tool for emergency care

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ABSTRACT

BACKGROUND: Hand injuries, particularly tendon injuries, are a common reason for emergency department visits and may significantly impact daily functioning. Traditional diagnostic approaches may fail to detect partial tendon injuries, highlighting the need for alternative imaging techniques. Ultrasonography (USG) has emerged as a rapid, non-invasive, and effective diagnostic tool for tendon injuries, particularly in emergency settings where magnetic resonance imaging (MRI) may not be readily available. This study evaluates the diagnostic effectiveness of ultrasonography in assessing tendon injuries among patients presenting with hand trauma in the emergency department (ED). Ultrasonography findings were compared with clinical evaluations to determine its role in diagnosing tendon injuries and guiding surgical management. This prospective observational study was conducted in the ED of a single tertiary-care hospital over a one-year period and included adult patients presenting with hand injuries.

METHODS: Patients who met the inclusion criteria underwent both clinical evaluation and ultrasonographic examination. A total of 68 patients were included in the study. All assessments were performed by an experienced emergency medicine physician using a Philips Affinity S70 ultrasonography system (Philips Healthcare, Bothell, WA, USA). Collected data included patient demographics, injury characteristics, ultrasonographic findings, and the need for surgical intervention. Statistical analyses were performed using the chi-square test and binary logistic regression to compare the diagnostic performance of the two methods.

RESULTS: Ultrasonography demonstrated a sensitivity of 82.6% (95% confidence interval [CI]: 0.69–0.91), specificity of 90.9% (95% CI: 0.70–0.98), and an overall accuracy of 85.3% (95% CI: 0.75–0.92) in predicting the need for tendon repair. Clinical evaluation showed slightly lower diagnostic performance, with a sensitivity of 80.4% (95% CI: 0.67–0.89) and an accuracy of 80.9% (95% CI: 0.70–0.89).

CONCLUSION: Regression analysis indicated that ultrasonography increased the likelihood of accurately diagnosing tendon injuries by 21.8 times compared to clinical assessment. Together, clinical evaluation and ultrasonography predicted 61% of all cases requiring tendon repair.

Keywords: Dynamic ultrasonography; emergency care; hand injuries; imaging techniques; prospective study; tendon injuries.

INTRODUCTION

Hand injuries are frequently encountered in the emergency department (ED) and are often straightforward, requiring only basic medical management.^[1] However, some injuries require surgical repair and may result in significant morbidity

if not treated promptly.^[2] Among hand injuries that may necessitate emergency surgical intervention, tendon lacerations can sometimes be overlooked.^[3] Tendon injuries are primarily diagnosed through clinical evaluation. However, clinical examination may be inadequate when patients are unable to cooperate because of severe pain or when assessment is limited

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by impaired consciousness.^[4] In such situations, physicians require a rapid and reliable diagnostic method. These limitations may lead to unnecessary surgical recommendations or inappropriate treatment plans.

In recent years, the evaluation of tendon injuries has become an important application area for ultrasonography (USG). Radiological techniques, such as magnetic resonance imaging (MRI) and ultrasound are valuable tools for diagnosing tendon injuries.^[5] Although MRI provides high-quality images, its use is limited by high cost, restricted availability, and the need to transport the patient to the imaging unit.^[6] USG, in contrast, is a low-cost imaging modality that can be performed quickly at the bedside.^[7] Because of these advantages, ultrasonography is increasingly used as a diagnostic tool in the ED.^[8] It is anticipated that USG will become an essential diagnostic modality for emergency physicians when evaluating patients presenting with hand and wrist injuries involving potential tendon damage.

The aim of this study was to evaluate the effectiveness of ultrasonography in detecting tendon injuries in patients presenting to the ED with hand and wrist trauma.

MATERIALS AND METHODS

Study Design

This prospective observational study was conducted at a single center and included patients who presented to the emergency department with hand injuries between October 1, 2022 and October 1, 2023. The study was performed in accordance with the principles of the Declaration of Helsinki (1964) and its subsequent amendments. This study was approved by the İzmir Local Clinical Research Ethics Committee (Date: 15.09.2022, Decision no: 57). Written informed consent was obtained from all participants. The study was designed and reported in compliance with the Standards for Reporting Diagnostic Accuracy Studies (STARD) 2015 guidelines for diagnostic accuracy studies.

Study Setting

The study was conducted in the ED of a tertiary-care hospital with an annual patient volume of approximately 400,000 visits. A hand surgeon is available on duty at this hospital every day. Consequently, patients from other hospitals who are suspected of requiring hand surgery are frequently referred to this center. Patients presenting to the ED are initially evaluated by an emergency medicine resident and an emergency medicine specialist. During this evaluation, patients suspected of requiring hand surgery are referred for consultation with the hand surgeon. The hand surgeon evaluates the patient in the emergency department and determines whether surgical intervention is required. Patients deemed to require surgery undergo either urgent or elective operative treatment, which is performed by the hand surgeon. This workflow reflects the routine clinical practice at our hospital. In this study, the

routine workflow was maintained; however, all patients for whom a hand surgery consultation was requested additionally underwent tendon ultrasonography performed by a single emergency medicine physician involved in the research. All corresponding images and data were systematically recorded. The emergency physicians evaluating the patients were blinded to the ultrasound findings. Likewise, the physician performing the ultrasound examination was blinded to the clinical assessment and consultation decision prior to the examination.

Patient Selection

Patients presenting to the ED with hand injuries were screened according to the following inclusion and exclusion criteria to establish the study population.

Inclusion Criteria

1. Age ≥ 18 years
2. Voluntary participation in the study with written informed consent
3. Glasgow Coma Scale (GCS) score of 14 or 15.

Exclusion Criteria

1. Age < 18 years
2. Presence of additional injuries that could negatively affect tendon examination
3. GCS score < 14
4. Intoxication with drugs or alcohol, or withdrawal states that could adversely affect the patient's consciousness and cooperation
5. Requirement for cardiopulmonary resuscitation during ED evaluation
6. Abrasions and superficial skin cuts without deep incisions.

Ultrasonographic Evaluation

Following the initial evaluation, all patients for whom a hand surgery consultation was requested underwent tendon ultrasonography performed by a designated emergency medicine physician with four years of experience and training in ultrasonography. This examination assessed whether the tendon had a complete or partial rupture. The assessment was performed using the linear probe of a Philips Affinity S70 ultrasonography system (Philips Healthcare, Bothell, WA, USA) with the "superficial tissue" preset. Ultrasonographic evaluation was conducted in B-mode grayscale, and all acquired images were recorded. During the ultrasound examination, the affected extremity was positioned on a table with the area of interest facing upward. If the skin surface was intact, the procedure was performed directly over the area of interest. In cases where an open wound was present, the wound edges were temporarily approximated using sterile adhesive strips (Steri-Strips) before imaging. The ultrasound examination was then performed under these standardized conditions.

Data Collection

The collected data included patient age, sex, mechanism of injury, anatomical location of the injury, past medical history, medication usage, alcohol or drug use status, ultrasonographic findings, and the need for hand surgery consultation. These data were recorded using a predesigned data collection form. The primary outcome of the study was the requirement for hand surgery. This outcome included both patients who did not require surgery after evaluation by the hand surgeon and patients who underwent surgery but were found to have no tendon injury.

Imaging

In this study, imaging was performed to identify tendon injuries and to evaluate potential damage to the muscle, tendon, and vascular structures. The imaging findings were classified as follows: (Fig. 1).

1. Normal Appearance

o Imaging demonstrated an intact and healthy tendon with no pathological findings (Fig. 2).

2. Muscle Rupture

o Disruption of muscle tissue continuity was observed (Fig. 3).

3. Partial Tendon Laceration

o In cases of partial tendon laceration, the tendon retained partial structural integrity, while a localized area showed disruption (Fig. 4). This finding suggests the possibility of partial functional impairment.

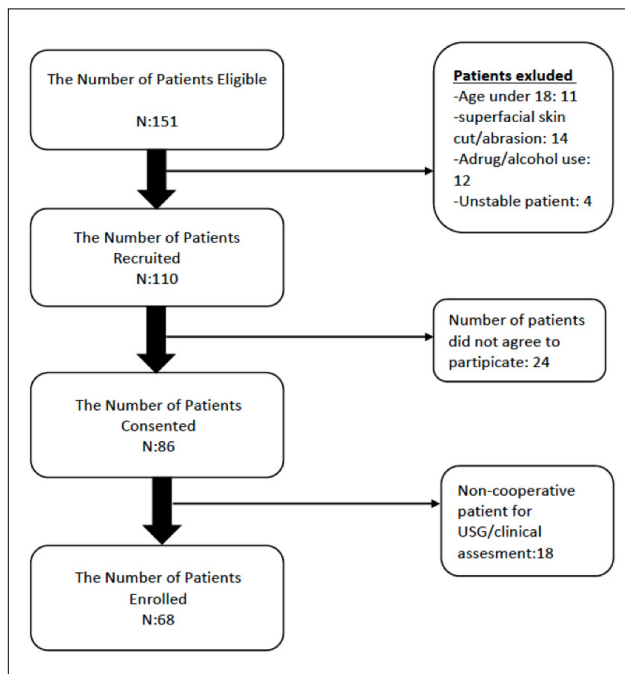


Figure 1. Study flowchart.

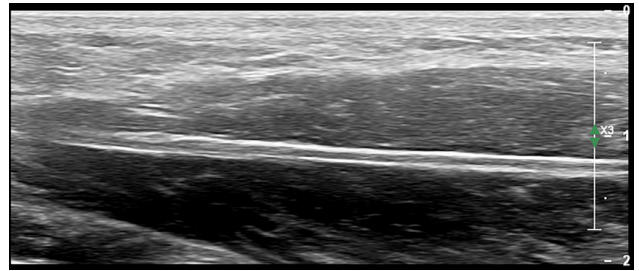


Figure 2. Normal appearance showing intact tendon and muscle structures.

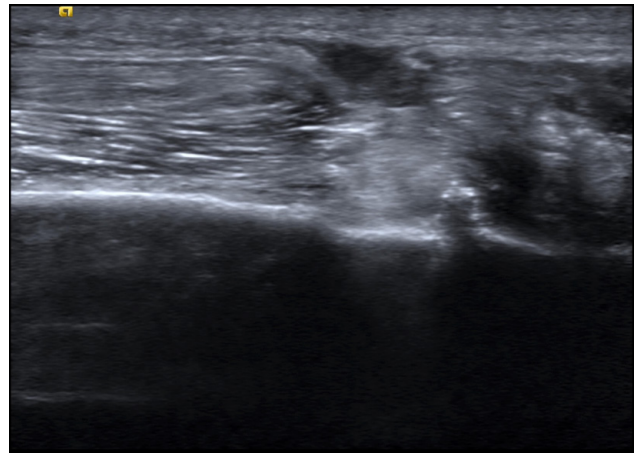


Figure 3. Muscle rupture demonstrating disruption of muscle tissue continuity.

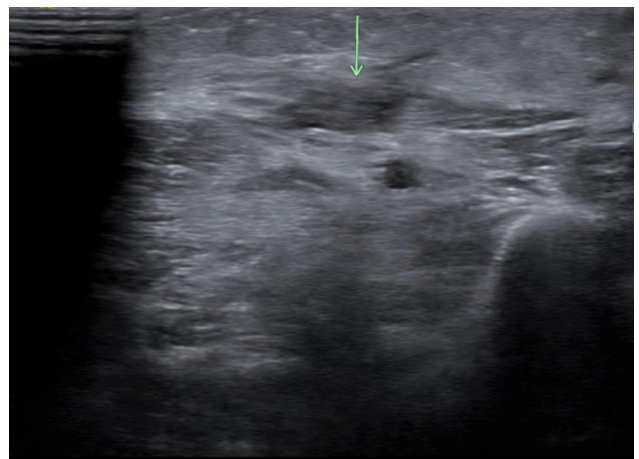


Figure 4. Partial tendon laceration showing localized disruption of the tendon structure.

4. Full-Thickness Tendon Rupture

o Full-thickness tendon rupture was characterized by complete discontinuity of the tendon, resulting in significant functional loss (Fig. 5).

5. Intact Digital Artery and Tendon

o No evidence of vascular or tendon injury was detected (Fig. 6).

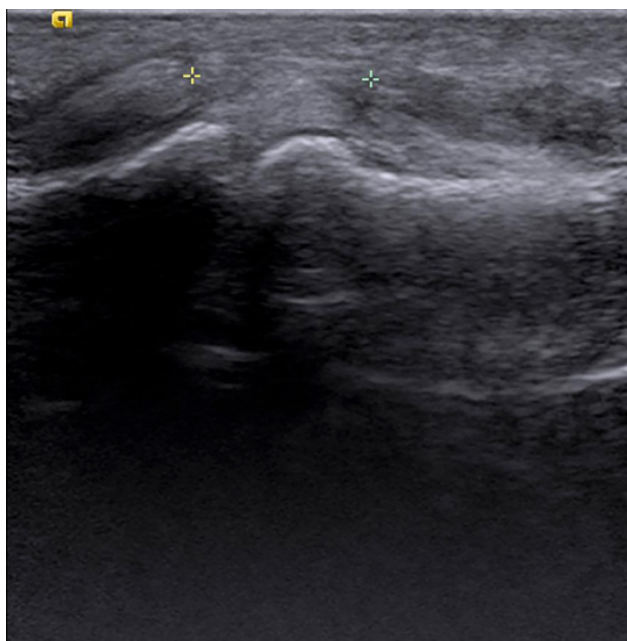


Figure 5. Full-thickness tendon rupture with complete discontinuity of the tendon.

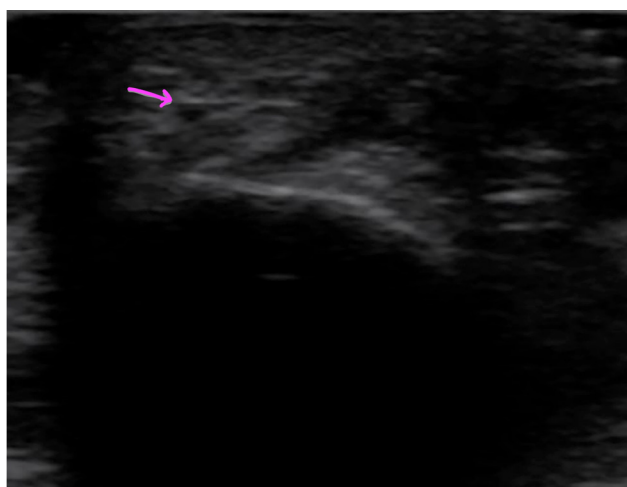


Figure 6. Intact digital artery and tendon with no evidence of vascular or tendon injury.

Note: The figures presented illustrate representative diagnostic images obtained during the study and correspond directly to the findings described above.

Statistical Analysis

Data were analyzed using SPSS (Statistical Package for the Social Sciences) version 26.0. Numerical data were presented as numbers, percentages, and means. The chi-square test was used to evaluate associations between categorical variables when comparing ultrasonographic and clinical evaluation methods. Sensitivity, specificity, positive predictive value, and negative predictive value were calculated for both diagnostic approaches. Binary logistic regression analysis was performed

to compare the effectiveness of the two methods in determining the need for hand surgery.

Additionally, a logistic regression model was developed to assess the combined effectiveness of both methods. The results of this model were presented using the Cox & Snell R² and Nagelkerke R² parameters. These measures illustrate the predictive capability of clinical and ultrasonographic evaluations in determining the need for hand surgery. All analyses were reported with a 95% confidence interval, and a p-value of <0.05 was considered statistically significant.

Post-Hoc Power Analysis

A post-hoc power analysis was performed based on the primary outcome of diagnostic accuracy between ultrasonographic and clinical evaluations. Using the observed effect size derived from the difference in accuracy (0.85 vs. 0.81), a sample size of 68 subjects, and a significance level (α) of 0.05, the calculated statistical power of the study was 0.88 (88%). This indicates that the study had adequate power to detect a clinically meaningful difference between the two diagnostic methods.

Table I. General characteristics of the patients

| | Number (n) | Percentage (%) |
|---------------------------------------|------------|----------------|
| Sex | | |
| Male | 58 | 85% |
| Female | 10 | 15% |
| Side of injury | | |
| Right | 40 | 59% |
| Left | 28 | 41% |
| Type of injury | | |
| Flexor | 35 | 52% |
| Extensor | 33 | 48% |
| Mechanism of injury | | |
| Cutting tool | 63 | 93% |
| Crush injury | 5 | 7% |
| Tendon injury on clinical examination | | |
| No | 27 | 40% |
| Yes | 41 | 60% |
| Tendon injury on ultrasonography | | |
| No | 40 | 59% |
| Yes | 28 | 41% |
| Need for hand surgery | | |
| No | 22 | 32% |
| Yes | 46 | 68% |
| Alcohol use | | |
| No alcohol use | 57 | 84% |
| Alcohol use | 11 | 16% |

RESULTS

A total of 151 patients were evaluated for the need for hand surgery during the study period. After applying the exclusion criteria, 68 patients were included in the final analysis. The mean age of the included patients was 34 ± 15 years, and 58 (85%) were male. It was determined that 68% of the patients required hand surgery, highlighting the severity of the condition in a substantial proportion of the study population. The general characteristics of the study population are presented in Table 1.

According to the chi-square analysis, both clinical evaluation and high-frequency linear transducer ultrasonography were statistically significant in determining the need for tendon repair ($p < 0.001$ for both) (Table 2). When the diagnostic performance of ultrasonography in predicting the need for tendon repair was evaluated, the sensitivity was 82.6% (95% confidence interval [CI]: 0.69–0.91), specificity 90.9% (95% CI: 0.70–0.98), positive predictive value (PPV) 95.0% (95% CI:

0.83–0.99), negative predictive value (NPV) 71.4% (95% CI: 0.53–0.85), and overall accuracy 85.3% (95% CI: 0.75–0.92). For clinical examination, sensitivity was 80.4% (95% CI: 0.67–0.89), specificity 81.8% (95% CI: 0.60–0.94), PPV 90.2% (95% CI: 0.77–0.97), NPV 66.7% (95% CI: 0.48–0.82), and overall accuracy 80.9% (95% CI: 0.70–0.89) (Table 3).

When the effectiveness of clinical evaluation and high-frequency linear transducer ultrasonography in determining the need for tendon repair was assessed using binary logistic regression analysis, each unit increase in the clinical evaluation score increased the likelihood of requiring tendon repair by 4.419 times, whereas each unit increase in the ultrasonography score increased it by 21.809 times (Table 4). This finding underscores the importance of ultrasonography as a complementary tool to clinical examination. According to the Nagelkerke value, the model including clinical examination and ultrasonography explained 61.4% of the need for tendon repair (Table 5).

Table 2. Chi-square analysis

| | Need for tendon repair | | | p |
|---------------------------------------|------------------------|-------------|--------------|--------|
| | No | Yes | Total | |
| Tendon injury on USG | | | | |
| Yes | 2 5.0% | 38 95.0% | 40 100.0% | <0.001 |
| No | 20 71.4% | 8 28.6% | 28 100.0% | |
| Total | 22 32.4% | 46 67.6% | 68 100.0% | |
| Tendon injury on clinical examination | | | | |
| Yes | 4 9.8% | 37 90.2% | 41 100.0% | <0.001 |
| No | 18 66.7% | 9 33.3% | 27 100.0% | |
| Total | 22 32.4% | 46 67.6% | 68 100.0% | |

USG: Ultrasonography.

Table 3. Diagnostic accuracy analysis

| | Sensitivity (95% CI) | Specificity (95% CI) | PPV (95% CI) | NPV (95% CI) | Overall accuracy (95% CI) |
|----------------------|-------------------------|-------------------------|-----------------|-----------------|------------------------------|
| USG | 83% (0.69–0.91) | 91% (0.70–0.98) | 95% (0.83–0.99) | 71% (0.53–0.85) | 0.86 (0.75–0.92) |
| Clinical examination | 80% (0.67–0.89) | 82% (0.60–0.94) | 90% (0.77–0.97) | 67% (0.48–0.82) | 0.81 (0.70–0.89) |

PPV: Positive predictive value; NPV: Negative predictive value.

Table 4. Binary logistic regression analysis

| | B | Sig. | Exp(B) | 95% CI for Exp(B) | |
|---------------------|--------|-------|--------|-------------------|---------|
| | | | | Lower | Upper |
| Clinical evaluation | 1.486 | 0.071 | 4.419 | 0.879 | 22.232 |
| USG evaluation | 3.082 | 0.001 | 21.809 | 3.650 | 130.301 |
| Constant | -1.298 | 0.009 | 0.273 | | |

USG: Ultrasonography.

DISCUSSION

This study highlights the importance of using ultrasonography to evaluate hand tendon injuries in the emergency department. The findings demonstrate that high-frequency linear transducer ultrasonography is effective in determining the need for tendon repair, with a sensitivity of 83% and a specificity of 91%, indicating that it is a reliable diagnostic method. These results emphasize the importance of rapid intervention in the ED and demonstrate how ultrasonography can contribute to this process.

The literature presents conflicting results regarding the effectiveness of ultrasonography in diagnosing upper extremity tendon injuries. For example, Meisami et al.^[9] reported that ultrasound evaluation, when compared to surgical outcomes, was not a reliable method for diagnosing tendon injuries. In contrast, Mohammadrezaei et al.^[10] evaluated tendon injuries in penetrating extremity traumas using ultrasonography and reported that ultrasound showed high accuracy in distinguishing injured tendons from normal tendons. However, in that study, the reference standard was clinical evaluation performed by a team consisting of orthopedic and emergency medicine residents, and the performance of ultrasonography was assessed accordingly. In the present study, surgical outcomes were used as the reference standard, and clinical decisions were compared with ultrasonographic evaluations performed by an emergency physician. According to our findings, both clinical examination and ultrasonographic evaluation were effective in distinguishing injured tendons from normal tendons. However, when the two methods were compared, ultrasonography demonstrated higher sensitivity and specificity. Moreover, because our hospital functions as a referral center for hand surgery, the PPV (95%) observed in our study may be higher than that reported in the literature due to the higher prevalence of injuries in the study population.

In the emergency department, clinical evaluation is the primary method used to diagnose tendon injuries; however, some patients may undergo unnecessary surgical exploration. Therefore, diagnostic methods that can more accurately confirm the diagnosis are being investigated. In one such study, Wu et al. reported that ultrasound was superior to clinical evaluation in diagnosing lower and upper extremity tendon ruptures in the emergency department.^[8] In the present

Table 5. Regression model summary

| Step | Model Summary | | |
|------|---------------------|--------------------------|---------------------------|
| | -2 Log likelihood | Cox&Snell R ² | Nagelkerke R ² |
| 1 | 46.246 ^a | 0.439 | 0.614 |

study, consistent with previous literature, ultrasonographic evaluation demonstrated better diagnostic performance than clinical examination, with higher sensitivity and specificity. Moreover, according to the binary logistic regression analysis performed to evaluate the relationship between tendon injuries in hand and wrist trauma and both clinical and ultrasonographic assessments, a one-unit increase in the clinical evaluation score was associated with a 4.419-fold increase in the probability of tendon injury, whereas a one-unit increase in the ultrasonographic evaluation score was associated with a 21.809-fold increase in the likelihood of tendon injury. When both methods were used together, the model explained approximately 61% of all tendon injuries in hand and wrist trauma according to Nagelkerke R² value.

This study has certain limitations. First, it did not evaluate whether the use of ultrasound influenced the time to diagnosis or the time to surgical intervention. Because bedside ultrasound has the potential to reduce both diagnostic and operative delays, future studies should investigate this aspect. Second, tendon injuries of the hand and wrist were analyzed collectively by anatomical region, flexor or extensor function, or specific tendon involvement. Future studies with larger sample sizes should include subgroup analyses comparing flexor and extensor tendon injuries separately, which may provide more detailed insights into the diagnostic performance and clinical utility of ultrasonography across different tendon types. Additionally, surgical exploration was not performed in patients who were clinically determined not to require hand surgery. This represents a limitation of the study, as the absence of confirmatory surgery in this group may have led to an overestimation of the NPV. Finally, because 68% of the patients in this study required surgical intervention, the positive predictive value may have been influenced by the high prevalence of tendon injury in the study population.

CONCLUSION

Bedside ultrasonography is a practical, safe, and reliable diagnostic tool for identifying partial or complete tendon ruptures in hand and wrist injuries. It supports clinical decision-making regarding the need for emergency surgical intervention, particularly in cases where the physical examination is inconclusive. Nevertheless, further large-scale studies are required to validate these findings and to establish standardized diagnostic protocols.

Ethics Committee Approval: This study was approved by the İzmir Local Clinical Research Ethics Committee (Date: 15.09.2022, Decision No: 57).

Informed Consent: Written informed consent was obtained from all participants.

Peer-review: Externally peer-reviewed.

Authorship Contributions: Concept: G.Y., H.A., E.S.B., C.A.; Design: G.Y., H.A., E.S.B., C.A.; Supervision: G.Y., H.A., E.S.B., C.A.; Resource: G.Y., H.A., E.S.B., C.A.; Materials: G.Y., H.A., E.S.B., C.A.; Data collection and/or processing: G.Y., H.A., E.S.B., C.A.; Analysis and/or interpretation: G.Y., H.A., E.S.B., C.A.; Literature review: G.Y., H.A., E.S.B., C.A.; Writing: G.Y., H.A., E.S.B., C.A.; Critical review: G.Y., H.A., E.S.B., C.A.

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REFERENCES

1. Ipekci A, Akdeniz YS, Orhan C, Cakmak F, Ikizceli I. Characteristics and the emergency department cost of tendon injuries of the hand. *Dicle Med J* 2020;47:596–602. [CrossRef]
2. Kloberdanz AL, Meyer J, Kammermeier K, Strahl A, Schlickewei C, Mader K, et al. Impact of body mass index on fracture severity, clinical, radiological and functional outcome in distal radius fractures: a retrospective observational study after surgical treatment. *Arch Orthop Trauma Surg* 2024;144:2915–23. [CrossRef]
3. Chartier C, ElHawary H, Baradaran A, Vorstenbosch J, Xu L, Efanov JI. Tendon: principles of healing and repair. *Semin Plast Surg* 2021;35:211–5. [CrossRef]
4. Nogueira Carrer HC, Zanca GG, Haik MN. Clinical assessment of chronic musculoskeletal pain-a framework proposal based on a narrative review of the literature. *Diagnostics (Basel)* 2022;13:62. [CrossRef]
5. Bezirgan U, Acar E, Erdoğan Y, Armangil M. The diagnostic value of ultrasonography and magnetic resonance imaging in missed hand tendon injuries. *Ulus Travma Acil Cerrahi Derg* 2023;29:530–7. [CrossRef]
6. Arnold TC, Freeman CW, Litt B, Stein JM. Low-field MRI: Clinical promise and challenges. *J Magn Reson Imaging* 2023;57:25–44. [CrossRef]
7. Werner K, Risko N, Burkholder T, Munge K, Wallis L, Reynolds T. Cost-effectiveness of emergency care interventions in low and middle-income countries: a systematic review. *Bull World Health Organ* 2020;98:341–52. [CrossRef]
8. Wu TS, Roque PJ, Green J, Drachman D, Khor KN, Rosenberg M, et al. Bedside ultrasound evaluation of tendon injuries. *Am J Emerg Med* 2012;30:1617–21. [CrossRef]
9. Meisami A. Diagnostic value evaluation of bed ultrasound compared with wound openness to diagnose tendon rupture in penetrating hand trauma at taleghani hospital in kermanshah, 2019. *Bull Emerg Trauma* 2021;9:15–20.
10. Mohammadrezaei N, Seyedhosseini J, Vahidi E. Validity of ultrasound in diagnosis of tendon injuries in penetrating extremity trauma. *Am J Emerg Med* 2017;35:945-48. [CrossRef]

ORİJİNAL ÇALIŞMA - ÖZ

El travmalarında tendon yaralanmalarının ultrasonografik değerlendirilmesi: Acil bakımda kritik bir araç

AMAÇ: El yaralanmaları, özellikle tendon yaralanmaları, acil servise başvuruların önemli bir nedenidir ve günlük yaşam aktivitelerini ciddi şekilde etkileyebilir. Geleneksel tanı yöntemleri kısmi tendon yaralanmalarını sıklıkla gözden kaçırmakta, bu da alternatif görüntüleme yöntemlerinin gerekliliğini ortaya koymaktadır. Ultrasonografi (USG), özellikle manyetik rezonans görüntüleme (MRG) imkânının olmadığı acil durumlarda, hızlı, non-invaziv ve etkili bir tanı aracı olarak öne çıkmaktadır.

GEREÇ VE YÖNTEM: Bu çalışma, acil servise el travması ile başvuran hastalarda tendon yaralanmalarının değerlendirilmesinde ultrasonografinin tanılabilirliğini incelemeyi amaçlamaktadır. Ayrıca USG'nin klinik değerlendirme ile karşılaştırılarak tendon yaralanmalarının tanısındaki rolü ve cerrahi müdahale planlamasındaki katkısı araştırılmıştır. Bu prospektif gözlemsel çalışma, üçüncü basamak tek merkezli bir hastanenin acil servisinde bir yıl boyunca yürütülmüştür. Çalışmaya el yaralanması ile başvuran erişkin hastalar dahil edilmiştir. Dahil edilme kriterlerini karşılayan hastalara klinik değerlendirme ve ultrasonografi uygulanmıştır. Çalışmaya toplam 68 hasta alınmış, değerlendirmeler deneyimli bir acil tıp uzmanı tarafından Philips Affinity S70 ultrasonografi cihazı (Philips Healthcare, Bothell, WA, ABD) kullanılarak yapılmıştır. Demografik veriler, yaralanma özellikleri, ultrasonografik bulgular ve cerrahi müdahale gereksinimleri kaydedilmiştir. İstatistiksel analizlerde ki-kare testi ve ikili lojistik regresyon kullanılmıştır. **BULGULAR:** Tendon onarımı gerekliliğinin belirlenmesinde ultrasonografinin duyarlılığı %83, özgüllüğü %91, pozitif prediktif değeri %95 ve negatif prediktif değeri %71 olarak bulunmuştur. Yalnızca klinik değerlendirme ise daha düşük prediktif değerlere sahipti.

SONUÇ: Regresyon analizi, ultrasonografinin klinik değerlendirmeye kıyasla tendon yaralanmalarını doğru tanılama olasılığını 21.8 kat artırdığını göstermiştir. Hem klinik değerlendirme hem de ultrasonografi birlikte tüm tendon onarımı gereksinimlerinin %61'ini öngörebilmiştir.

Anahtar sözcükler: Acil bakım; dinamik ultrasonografi; el yaralanmaları, görüntüleme teknikleri; prospektif çalışma; tendon yaralanmaları.

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