

ChatGPT Provided Excellent or Satisfactory Answers to Questions about de Quervain's Tenosynovitis, but still Requires Verification by Health Care Professionals

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SUMMARY

Objective. ChatGPT, an AI chatbot by OpenAI, is increasingly utilized in patient and resident education due to its ability to provide information across various medical topics. However, the accuracy and reliability of its responses, particularly for specialty-specific conditions, are still being evaluated. This study aims to assess ChatGPT's accuracy in answering standardized questions on de Quervain's tenosynovitis to determine its effectiveness in supporting medical education.

Materials and methods. Frequently asked questions regarding de Quervain's tenosynovitis were identified from medical websites, and ten questions were selected by consensus among the authors. On July 4, 2024, these questions were posed to ChatGPT (version 4), and the responses were evaluated for accuracy and quality using the ChatGPT Response Rating System, with consensus reached among authors in cases of differing opinions.

Results. Based on the ChatGPT Response Rating System, 30% (n = 3) of the responses scored a 1 (excellent, requiring no clarification), 50% (n = 5) scored a 2 (satisfactory, needing minimal clarification), and 20% (n = 2) scored a 3 (satisfactory, requiring moderate clarification). Extraneous details were omitted to condense the responses into summary sentences focused on the main answer.

Conclusions. ChatGPT provided excellent or satisfactory answers to questions about de Quervain's tenosynovitis, indicating its potential as a supplementary tool in medical education for this condition. However, the accuracy of its information can vary, necessitating verification by medical experts, and while not fully ready for integration into medical education, ChatGPT is expected to improve with further refinement of its data inputs.

KEY WORDS

ChatGPT; de Quervain's tenosynovitis; artificial intelligence; hand surgery; education.

INTRODUCTION

Chat Generative Pre-Trained Transformer (ChatGPT), an artificial intelligence (AI) chatbot launched by OpenAI in November 2022, is estimated to have over 100 million active users (1). ChatGPT is a powerful communication tool capa-

ble of answering questions and engaging in natural language conversations on a wide range of topics, including health-care (2). High-quality surgical training materials are essential for good medical education. Creating these materials can be quite time-consuming, even for experienced medi-

cal educators. AI-generated content can reduce the workload of professional educators and be particularly valuable in facilitating access to information for resident doctors (3). ChatGPT contains a wide range of information, including triage, diagnosis, treatment, research, and preoperative planning (4). Therefore, it has increasingly been used in educational activities, literature reviews, or the writing of scientific articles (5). As a result, the accuracy and reliability of ChatGPT, particularly in answering specialty-specific questions, have come under scrutiny. Studies have shown that ChatGPT can serve as a virtual teaching assistant and provide reasonably accurate answers to standardized medical questions (6). Additionally, ChatGPT has passed Step 1 of the United States Medical Licensing Examination (USMLE) and achieved a ranking at the level of a third-year orthopedic resident in the orthopaedic surgery in-training examination (OITE) supervised by the American Academy of Orthopaedic Surgeons (AAOS) (7, 8). However, ChatGPT could not pass the first part of the European Board of Hand Surgery (EBHS) diploma examination (9). Studies indicate that different results are obtained in exams depending on the specialty. This highlights the need to evaluate ChatGPT's accuracy specific to the specialty and subject matter. There are limited evidence evaluating ChatGPT's responses in hand surgery topics (10).

De Quervain's tenosynovitis is tenosynovitis of the abductor pollicis longus (APL) and extensor pollicis brevis (EPB) tendons located in the first extensor compartment (11). It is one of the common diseases in hand surgery practice, with an incidence of approximately 1.3% among women and 0.5% among men (12). Patients present with pain and inflammation around radial styloid. Conservative treatment includes non-steroidal anti-inflammatory drugs, splint application, activity modification, and local steroid injections. If symptoms do not improve with conservative treatment, surgical intervention may be necessary (13). This study aimed to evaluate the responses given by ChatGPT to standardized questions related to de Quervain's tenosynovitis. To our knowledge, this is the first study in the literature conducted specifically on de Quervain's tenosynovitis.

MATERIALS AND METHODS

Since this study did not involve any *in vivo* procedures, institutional ethics committee approval was not required. The formulation of the 10 questions was based on a structured approach aimed at capturing the most relevant aspects of de Quervain's tenosynovitis. Initially, we performed a comprehensive search of frequently asked questions on medical

websites related to the condition. These included questions covering its diagnosis, natural course, non-surgical treatment options, and surgical interventions. To ensure that the selected questions were representative of real-world clinical scenarios, we held discussions among the authors to reach a consensus. Each author contributed insights based on their clinical experience, and the final set of questions was chosen through an iterative process that emphasized the importance of clinical relevance, educational value, and clarity for both patients and healthcare professionals. This methodical approach allowed us to cover the key aspects of de Quervain's tenosynovitis while ensuring that the questions could be used to reliably assess the accuracy of ChatGPT's responses (14). On July 4, 2024, these questions were asked to the AI chatbot ChatGPT (version 4) without any additional guidance, and no limits were set on the length of the responses. ChatGPT's responses were recorded after the initial query and were not re-queried. The responses were evaluated for accuracy and quality using an evidence-based scientific approach by the authors and rated using the ChatGPT Response Rating System (**table I**) introduced by Mika *et al.* (15). This rating system assessed the responses in four categories: 1: "Excellent response with no explanation needed": The response was deemed accurate, comprehensive, and required no further explanation. 2: "Satisfactory with minimal explanation required": The response was correct but required minimal additional explanation to clarify finer points in the literature. 3: "Satisfactory with moderate explanation required": The response was still correct but needed moderate explanation due to outdated or unrelated information. 4: "Unsatisfactory, requires significant explanation": The response contained incorrect information or was overly generalized, leading to potential misinterpretation. In cases of differing opinions, the responses were re-evaluated until a consensus was reached among all authors.

Table I. ChatGPT Response Rating System.

Response Accuracy Score	Response Accuracy Description
1	Excellent response not requiring clarification
2	Satisfactory requiring minimal clarification
3	Satisfactory requiring moderate clarification
4	Unsatisfactory requiring substantial clarification

RESULTS

Below are 10 questions related to de Quervain's tenosynovitis, the responses provided by ChatGPT, and their respective rating scores (**table II**). According to the ChatGPT Response Rating System, 30% ($n = 3$) of the questions received a score of 1, 50% ($n = 5$) received a score of 2, and 20% ($n = 2$) received a score of 3. Extraneous details that did not pertain to the main answer were omitted to condense the responses into summary sentences.

Question 1: What is de Quervain tenosynovitis?

ChatGPT response: De Quervain tenosynovitis is a painful condition affecting the tendons on the thumb side of your wrist. It occurs when the two tendons around the base of your thumb become swollen. The swelling causes the sheaths (casings) covering the tendons to become inflamed. This puts pressure on nearby nerves, causing pain and numbness along the back of your thumb and up the side of your wrist.

Symptoms: Pain near the base of your thumb, swelling near the base of your thumb, difficulty moving your thumb and wrist when doing activities that involve grasping or pinching, a "sticking" or "stop-and-go" sensation in your thumb when moving it.

Analysis: Satisfactory requiring moderate clarification

It is correctly stated that de Quervain's tenosynovitis is an inflammatory condition affecting the two tendons and their sheath on the thumb side. However, it does not mention that these tendons are the APL and EPB located in the first dorsal compartment (16). The symptoms are accurately described as pain near the base of the thumb, swelling, and difficulty moving the thumb and wrist during activities involving grasping or pinching. However, it does not specifically emphasize the pain in the radial side of the wrist and around the radial styloid (16-18). It is also not mentioned that the nerve that may become compressed due to inflammation and swelling is the superficial branch of the radial nerve, and this condition can develop after prolonged symptoms (19).

Question 2: What is the anatomy relevant to de Quervain tenosynovitis?

ChatGPT response: De Quervain tenosynovitis involves the anatomy of the wrist and thumb, specifically focusing on the tendons and their sheaths. Here is an overview of the relevant anatomy:

1. *Tendons; APL and EPB.*
2. *Tendon Sheaths; These tendons run through a fibrous tunnel (the first dorsal compartment) on the thumb side of the wrist.*
3. *Extensor Retinaculum; A fibrous band on the back of the wrist that holds the extensor tendons in place. The APL and EPB tendons pass underneath this structure.*

4. *Bones; Radius and Metacarp.*

In de Quervain tenosynovitis, the tendons of the APL and EPB and their sheaths become inflamed.

Analysis: Satisfactory requiring minimal clarification

It is clearly and explicitly stated that the anatomical structures affected in de Quervain's tenosynovitis are the APL and EPB tendons located in the first dorsal compartment and the fibrous tunnel (tendon sheaths) through which these tendons pass (20, 21). However, it does not mention that in approximately 40% of the population, the EPB and APL tendons may be separated by a septum and that multiple tendon slips can be present for the APL (16).

Question 3: What causes de Quervain tenosynovitis?

ChatGPT response:

1. *Repetitive Motion: Overuse; Examples include typing, playing musical instruments, knitting, or using hand tools. Repeatedly grasping, pinching, or lifting objects.*
2. *Direct injury, trauma, strain.*
3. *Inflammatory Conditions; Rheumatoid Arthritis and other inflammatory conditions.*
4. *Hormonal Changes; Pregnancy.*
5. *Age and Gender.*
Age: The condition is most common in people between the ages of 30 and 50.
Gender: It is more frequently seen in women than in men.
6. *Occupational Factors.*
7. *Anatomical Variations.*
Tendon Sheath Narrowing: Some individuals may have a naturally narrower tendon sheath, which can predispose them to developing the condition with less provocation.
8. *Infections.*

Analysis: Excellent response not requiring clarification

It is clearly and explicitly stated that activities involving repetitive and strenuous movements of the wrist and thumb, such as typing, playing musical instruments, knitting, and childcare, can cause de Quervain's tenosynovitis (16, 22). ChatGPT provides a complete and excellent response by also identifying pregnancy, trauma, age, female gender, inflammatory diseases like rheumatoid arthritis, and anatomical variations such as narrowing of the tendon sheath as risk factors for the development of de Quervain's tenosynovitis (19, 23-24).

Question 4: How common is de Quervain tenosynovitis?

ChatGPT response: Estimates suggest that it affects about 0.5% of men and 1.3% of women in the general population. Women are significantly more likely to develop de Quervain tenosynovitis than men. Some studies suggest it is up to 10 times more common in women. Most commonly affects individuals between the ages of 30 and 50.

Analysis: Excellent response not requiring clarification

ChatGPT provides an excellent and literature-consistent response by stating that de Quervain's tenosynovitis is most commonly seen between the ages of 30 and 50, with an incidence rate of approximately 0.5% in men and 1.3% in women in the general population, and noting that some studies report it to be about 10 times more common in women (22-26).

Question 5: Which physical findings are characteristic of de Quervain tenosynovitis?

ChatGPT response: Characteristic physical findings of de Quervain tenosynovitis include localized tenderness at the radial styloid and first dorsal compartment, swelling near the base of the thumb, decreased thumb mobility with a "sticking" sensation, a positive Finkelstein's test, crepitus on movement, decreased grip strength, pain on resisted thumb extension and abduction, and soft tissue thickening.

Finkelstein's Test: To perform this test, the patient makes a fist with the thumb tucked inside the fingers. The wrist is then ulnarly deviated (moved toward the little finger). A positive test is indicated by sharp pain along the distal radius at the site of the tendons.

Analysis: Satisfactory requiring minimal clarification

The physical examination findings are correctly and comprehensively described, noting that de Quervain's tenosynovitis can cause pain, swelling, and tenderness over the radial styloid region and the first dorsal compartment, as well as crepitus during tendon movements. It also mentions difficulty in moving the thumb, especially during gripping or pinching motions. Additionally, it correctly explains the use of Finkelstein's test for diagnosis and its application (16, 21). However, it does not mention the Eichhoff test, which, despite having lower specificity than Finkelstein's test, is also used for diagnosis, nor does it mention the wrist hyperflexion and abduction of the thumb (WHAT) test (23, 27-29).

Question 6: What is the role of radiographs in the evaluation of de Quervain tenosynovitis?

ChatGPT response: De Quervain tenosynovitis is primarily a clinical diagnosis based on history and physical examination. Radiographs are not typically needed for diagnosing de Quervain tenosynovitis but can be useful to rule out fractures, osteoarthritis, and calcifications, assess concurrent wrist pathologies, aid in pre-surgical planning, and provide baseline imaging for future comparisons.

Analysis: Excellent response not requiring clarification

ChatGPT provides a complete and accurate response consistent with the literature by stating that the diagnosis of de Quervain's tenosynovitis is a clinical diagnosis based on history and physical examination, and that routine radio-

graphs (X-rays) are not necessary for diagnosis. However, X-rays can be used to rule out other pathologies such as associated fractures, first carpometacarpal joint arthritis, carpal bone pathologies, and calcifications around the tendons (16, 23, 28). Since the question specifically asked about the role of radiography in diagnosis, ChatGPT did not provide information about ultrasound (USG) and MRI. However, when the question was phrased as 'What is the role of radiology in the evaluation of de Quervain tenosynovitis?', ChatGPT also provided information on radiological methods used for diagnosis, such as ultrasound and MRI (23, 30).

Question 7: What is included in medical therapy for de Quervain tenosynovitis?

ChatGPT response: Medical therapy for de Quervain tenosynovitis typically includes a combination of conservative treatments aimed at reducing inflammation, relieving pain, and preventing further irritation of the tendons. Medical therapy includes rest, activity modification, ergonomic adjustments, splinting with a thumb spica splint, NSAIDs (oral and topical), physical therapy (therapeutic exercises and ultrasound therapy), local steroid injections, ice therapy, patient education, ergonomic modifications, and alternative therapies like acupuncture and occupational therapy. Follow-up care is essential to monitor progress and adjust treatment.

Analysis: Satisfactory requiring minimal clarification

The response accurately describes medical treatment as a combination of conservative therapies aimed at reducing pain and inflammation. The main components of medical treatment are activity modification to reduce repetitive wrist and thumb movements, the use of a thumb-spica wrist splint, NSAID use, ice application, physical therapy modalities, and local steroid injections, providing a clear answer (16-17, 21-22). However, it does not mention platelet-rich plasma (PRP) injections, which have been shown to be effective in treatment and have comparable mid-term outcomes with local steroid injections according to some studies (22-23). Additionally, the response does not highlight the high success rates of local steroid injections, which are known to be one of the most successful non-surgical treatment methods with success rates between 62% and 100%. The potential complications of local steroid injections, such as skin and subcutaneous tissue atrophy, skin depigmentation, and tendon rupture, are also not mentioned (16, 28).

Question 8: What is the role of surgery in the treatment of de Quervain tenosynovitis?

ChatGPT response: Surgery for de Quervain tenosynovitis is considered when conservative treatments fail, severe pain persists, or there is significant functional impairment. The

procedure involves making an incision, releasing the inflamed tendons (abductor pollicis longus and extensor pollicis brevis) sheath and removing any adhesions or thickened tissues. Post-operative care includes pain management, wound care, physical therapy, and activity modification. Surgery generally has a high success rate, low recurrence rate, and potential risks include infection, nerve injury, and scarring.

Analysis: Satisfactory requiring minimal clarification

ChatGPT correctly states that surgical treatment for de Quervain's tenosynovitis is indicated for patients with persistent symptoms who do not benefit from conservative treatments such as rest, splinting, NSAID use, physical therapy, and local steroid injections. It also accurately describes that the goal of surgical treatment is to release the first dorsal compartment to alleviate pain and restore function, aligning with the literature (20-22, 31). However, it mentions a very broad time range, stating that conservative treatment should be applied for several weeks to several months before considering surgery. According to the literature, surgery is recommended for patients with symptoms persisting for more than 3-6 months despite conservative treatment (11, 24, 28, 32).

Question 9: What are the operative details for surgical treatment of de Quervain tenosynovitis?

ChatGPT response: The surgical treatment for de Quervain tenosynovitis typically involves a procedure called the first dorsal compartment release. Preoperative preparation includes patient evaluation, informed consent, and anesthesia. Local anesthesia is commonly used, but regional or general anesthesia may be considered in some cases. A small, longitudinal or transverse incision is made over the first dorsal compartment at the radial styloid. The subcutaneous tissue is carefully dissected and care is taken to avoid injuring the superficial branches of the radial nerve. The extensor retinaculum is incised longitudinally to release the tendon sheath. The tendons of the APL and EPB are inspected for any signs of damage or thickening, and any adhesions are carefully removed. If there are multiple slips of the APL tendon, they are all released. Postoperative care involves pain management, wound care, physical therapy, and activity modification.

Analysis: Satisfactory requiring moderate clarification

ChatGPT provides a near-excellent response in line with the literature by stating that patients with de Quervain's tenosynovitis need to be informed and give consent prior to surgery. It highlights the importance of using a tourniquet to maintain a bloodless field and mentions that the surgery can be performed under local, regional, or general anesthesia. The response also describes the procedure for surgical intervention: a longitudinal or transverse incision over the radial styloid area and the first dorsal compartment, ensuring that the

superficial sensory branch of the radial nerve is not damaged, and the longitudinal release of the first dorsal compartment tendon sheath, followed by inspection of the APL and EPB tendons. It notes the possibility of multiple APL tendon slips and the need to release these slips and any adhesions present (16,24,31). However, it does not mention that an oblique incision might also be used or discuss the advantages and disadvantages of transverse *versus* longitudinal incisions (25, 31). Additionally, it omits information about the need to open the tendon sheath from the dorsal side to prevent postoperative subluxation, the potential for pulley reconstruction to avoid this complication, the excision of aberrant APL tendon slips, the presence of an additional septum between the EPB and APL tendons that may also need to be released, and the use of endoscopic release methods in de Quervain's tenosynovitis surgery (16, 19, 21, 24, 33-35).

Question 10: What are possible complications of the surgical treatment of de Quervain tenosynovitis?

ChatGPT response: The surgical treatment of de Quervain tenosynovitis, while generally effective and safe, can have potential complications. These complications are infection, nerve injury (superficial radial nerve), excessive scar formation, tendon adhesions, incomplete release, recurrence of symptoms, complex regional pain syndrome (CRPS), joint stiffness, bleeding and hematoma formation, and delayed wound healing. While these complications are possible, they are uncommon. Proper surgical technique, thorough preoperative evaluation, and comprehensive postoperative care are crucial in minimizing the risk of complications.

Analysis: Satisfactory requiring minimal clarification

ChatGPT provides a thorough explanation of potential complications during de Quervain's tenosynovitis surgery, noting the risk of injury to the superficial sensory branch of the radial nerve, inadequate release, and postoperative recurrence. It also highlights possible postoperative issues such as bleeding, hematoma, infection, delayed wound healing, and the development of hypertrophic scarring or keloids. Additionally, it describes the potential for tendon adhesions, restricted movement, and complex regional pain syndrome, including the symptoms and treatment options for these complications (11, 16, 24, 25, 31, 36). However, it does not address the possibility of volar subluxation of the tendons in the first dorsal compartment post-surgery and the associated symptoms (16, 24, 25, 35).

DISCUSSION

The use of artificial intelligence technology in medicine is enhancing medical education by providing new teaching

Table II. Questions and response accuracy score.

Questions	Response Accuracy Score
What is de Quervain tenosynovitis?	3
What is the anatomy relevant to de Quervain tenosynovitis?	2
What causes de Quervain tenosynovitis?	1
How common is de Quervain tenosynovitis?	1
Which physical findings are characteristic of de Quervain tenosynovitis?	2
What is the role of radiographs in the evaluation of de Quervain tenosynovitis?	1
What is included in medical therapy for de Quervain tenosynovitis?	2
What is the role of surgery in the treatment of de Quervain tenosynovitis?	2
What are the operative details for surgical treatment of de Quervain tenosynovitis?	3
What are possible complications of the surgical treatment of de Quervain tenosynovitis?	2

methods and facilitating the training of healthcare professionals (2, 6, 37). ChatGPT can be utilized for clinical evaluations related to diagnosis and treatment by posing different real patient scenarios and questions, offering practical insights. ChatGPT is an AI system that autonomously learns from data and generates outputs after training on datasets (2, 37). However, unreliable data sources can mislead ChatGPT, causing it to provide incorrect answers. Therefore, the use of AI technologies like ChatGPT in medical education raises concerns and necessitates the verification of the accuracy of the information provided (37). As medicine and surgery increasingly adopt technology-assisted data management, including potential AI applications and telemedicine, it is evident that this will contribute more universally to the standardization of data provision and storage (38).

Studies show that while ChatGPT provides reasonably accurate answers to medical questions, the quality and accuracy of the responses can vary depending on the specialty and topic (6-9). In our study, we analyzed the responses provided by ChatGPT to standardized questions about de Quervain's tendinitis. We found that 70% of the answers required at least minimal to moderate explanation, and no unsatisfactory responses were identified (**table II**). This finding is consistent with other studies in the literature (15, 39). We believe that with the increasing availability of AI-generated data in the future, coupled with advancements in the ability to verify the accuracy of this data, AI will likely be used more frequently in daily practice within medicine and orthopedics. In the near future, we anticipate that AI will

be more reliably utilized in various medical domains such as diagnosis, preoperative planning, education, patient communication, and data archiving. As these technologies continue to evolve, their integration into clinical workflows will enhance both the efficiency and quality of care provided, while still requiring ongoing validation and oversight by medical professionals.

CONCLUSIONS

ChatGPT has provided excellent or satisfactory answers to questions about de Quervain's tendinitis. Although our evaluation is subjective, these responses suggest that ChatGPT can be a useful and supplementary tool in medical education regarding de Quervain's tendinitis. However, it is important to remember that the accuracy of the provided information can vary due to numerous factors, and it is the responsibility of the relevant medical experts to verify it. Additionally, the study's findings are based on questions from a specific time period. As language models are continuously updated, it is likely that future iterations could yield higher accuracy if the same questions were revisited. While ChatGPT may not be fully ready to be integrated into medical education at its current state, it is expected to reach this level soon with further expansion and improvement of academic data inputs.

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None.

DATA AVAILABILITY

Data are available under reasonable request to the corresponding author.

CONTRIBUTIONS

KU, MB, MKY: conceptualization. ÖSH, MAC: methodology. KU, ÖSH: formal analysis, investigation. KU, MB, MKY: writing – original draft preparation. AK: writing – review & editing. AK, MAC: supervision.

REFERENCES

- Christy M, Morris MT, Goldfarb CA, Dy CJ. Appropriateness and Reliability of an Online Artificial Intelligence Platform's Responses to Common Questions Regarding Distal Radius Fractures. *J Hand Surg Am.* 2024;49(2):91-8. doi: 10.1016/j.jhsa.2023.10.019.
- Magruder ML, Rodriguez AN, Wong JCJ, et al. Assessing Ability for ChatGPT to Answer Total Knee Arthroplasty-Related Questions. *J Arthroplasty.* 2024;39(8):2022-7. doi: 10.1016/j.arth.2024.02.023.
- DeCook R, Muffly BT, Mahmood S, et al. AI-Generated Graduate Medical Education Content for Total Joint Arthroplasty: Comparing ChatGPT Against Orthopaedic Fellows. *Arthroplast Today.* 2024 4;27:101412. doi: 10.1016/j.artd.2024.101412.
- Lim B, Seth I, Cuomo R, et al. AI Answer My Questions? Utilizing Artificial Intelligence in the Perioperative Assessment for Abdominoplasty Patients. *Aesthetic Plast Surg.* 2024;48(22):4712-24. doi: 10.1007/s00266-024-04157-0.
- Thibaut G, Dabbagh A, Liverneaux P. Does Google's Bard Chatbot perform better than ChatGPT on the European hand surgery exam? *Int Orthop.* 2024;48(1):151-8. doi: 10.1007/s00264-023-06034-y.
- Ozdog Y, Hayes DS, Makar GS, Manzar S, Foster BK, Shultz MJ, Klena JC, Grandizio LC. Comparison of Artificial Intelligence to Resident Performance on Upper-Extremity Orthopaedic In-Training Examination Questions. *J Hand Surg Glob Online.* 2023 11;6(2):164-8. doi: 10.1016/j.jhsg.2023.10.013.
- Gilson A, Safranek CW, Huang T, Socrates V, Chi L, Taylor RA, Chartash D. How Does ChatGPT Perform on the United States Medical Licensing Examination (USMLE)? The Implications of Large Language Models for Medical Education and Knowledge Assessment. *JMIR Med Educ.* 2023;9:e45312. doi: 10.2196/45312.
- Ghanem D, Covarrubias O, Raad M, LaPorte D, Shafiq B. ChatGPT Performs at the Level of a Third-Year Orthopaedic Surgery Resident on the Orthopaedic In-Training Examination. *JB JS Open Access.* 2023;8(4):e23.00103. doi: 10.2106/JBJS.OA.23.00103.
- Traoré SY, Goetsch T, Muller B, Dabbagh A, Liverneaux PA. Is ChatGPT able to pass the first part of the European Board of Hand Surgery diploma examination? *Hand Surg Rehabil.* 2023;42(4):362-4. doi: 10.1016/j.hansur.2023.06.005.
- Crook BS, Park CN, Hurley ET, Richard MJ, Pidgeon TS. Evaluation of Online Artificial Intelligence-Generated Information on Common Hand Procedures. *J Hand Surg Am.* 2023;48(11):1122-7. doi: 10.1016/j.jhsa.2023.08.003.
- Altay MA, Erturk C, Isikan UE. De Quervain's disease treatment using partial resection of the extensor retinaculum: A short-term results survey. *Orthop Traumatol Surg Res.* 2011;97(5):489-93. doi: 10.1016/j.otsr.2011.03.015.
- Walker-Bone K, Palmer KT, Reading I, Coggon D, Cooper C. Prevalence and impact of musculoskeletal disorders of the upper limb in the general population. *Arthritis Rheum.* 2004;51(4):642-51. doi: 10.1002/art.20535.
- Goel R, Abzug JM. de Quervain's tenosynovitis: a review of the rehabilitative options. *Hand (N Y).* 2015;10(1):1-5. doi: 10.1007/s11552-014-9649-3.
- Meals, RA De Quervain Tenosynovitis Questions & Answers. <https://emedicine.medscape.com/article/1243387-questions-and-answers?form=fpf>. Last access date: 07/03/2024.
- Mika AP, Martin JR, Engstrom SM, Polkowski GG, Wilson JM. Assessing ChatGPT Responses to Common Patient Questions Regarding Total Hip Arthroplasty. *J Bone Joint Surg Am.* 2023;105(19):1519-26. doi: 10.2106/JBJS.23.00209.
- Adams JE, Habbu R. Tendinopathies of the Hand and Wrist. *J Am Acad Orthop Surg.* 2015;23(12):741-50. doi: 10.5435/JAAOS-D-14-00216.
- Ashraf MO, Devadoss VG. Systematic review and meta-analysis on steroid injection therapy for de Quervain's tenosynovitis in adults. *Eur J Orthop Surg Traumatol.* 2014;24(2):149-57. doi: 10.1007/s00590-012-1164-z.
- Rowland P, Phelan N, Gardiner S, Linton KN, Galvin R. The Effectiveness of Corticosteroid Injection for De Quervain's Stenosing Tenosynovitis (DQST): A Systematic Review and Meta-Analysis. *Open Orthop J.* 2015;9:437-44. doi: 10.2174/1874325001509010437.
- Bosman R, Hundepool CA, van der Oest MJW, et al. Preoperative Indicators of the Effectiveness of Surgical Release in Patients with de Quervain Disease: A Prospective Cohort Study. *Plast Reconstr Surg.* 2024;153(5):952e-961e. doi: 10.1097/PRS.00000000000010445.
- Thandoni A, Yetter WN, Regal SM. Anatomic location of the first dorsal extensor compartment for surgical De-Quervain's tenosynovitis release: A cadaveric study. *World J Orthop.* 2024;15(4):379-85. doi: 10.5312/wjo.v15.i4.379.
- Karakaplan M, Ertem K, Canbay A, Aslantürk O, Yoloğlu S. One portal endoscopic release of the first extensor compartment in de Quervain's disease. *Acta Orthop Traumatol Turc.* 2019;53(1):40-4. doi: 10.1016/j.aott.2018.10.004.
- Chong HH, Pradhan A, Dhingra M, Liong W, Hau MYT,

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES

During the preparation of this work the authors used ChatGPT in order to edit language. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interests.

- Shah R. Advancements in de Quervain Tenosynovitis Management: A Comprehensive Network Meta-Analysis. *J Hand Surg Am.* 2024;49(6):557-569. doi: 10.1016/j.jhsa.2024.03.003.
23. Ashour AT, Ashour A, Khalaf AH, Marie AA, Mohamed EA. A Comparison of the Results of Platelet-Rich Plasma Injection Versus the Results of Corticosteroid Injections in De-Quervain Tenosynovitis. *Cureus.* 2024;16(5):e61471. doi: 10.7759/cureus.61471.
 24. Khurana A, Agarwal P, Gupta SC, Malik K, Jain V. Pulley Reconstruction Following Surgical Release of DC1 Pulley in De Quervain's Tenosynovitis: Surgical Technique and Case Series. *Arch Bone Jt Surg.* 2022;10(5):459-65. doi: 10.22038/ABJS.2021.58872.2913.
 25. Kumar K. Outcome of longitudinal versus transverse incision in de Quervain's disease and its implications in Indian population. *Musculoskelet Surg.* 2016;100(1):49-52. doi: 10.1007/s12306-015-0388-6.
 26. Cevik J, Keating N, Hornby A, Salehi O, Seth I, Rozen WM. Corticosteroid injection versus immobilisation for the treatment of De Quervain's tenosynovitis: A systematic review and meta-analysis. *Hand Surg Rehabil.* 2024;43(3):101694. doi: 10.1016/j.hansur.2024.101694.
 27. Maruyama M, Takahara M, Kikuchi N, Ito K, Watanabe T, Ogino T. De Quervain disease caused by abductor pollicis longus tenosynovitis: a report of three cases. *Hand Surg.* 2009;14(1):43-7. doi: 10.1142/S0218810409004220.
 28. Fakoya AO, Tarzian M, Sabater EL, Burgos DM, Maldonado Marty GI. De Quervain's Disease: A Discourse on Etiology, Diagnosis, and Treatment. *Cureus.* 2023;15(4):e38079. doi: 10.7759/cureus.38079.
 29. Wu F, Rajpura A, Sandher D. Finkelstein's Test Is Superior to Eichhoff's Test in the Investigation of de Quervain's Disease. *J Hand Microsurg.* 2018;10(2):116-8. doi: 10.1055/s-0038-1626690.
 30. Challoumas D, Ramasubbu R, Rooney E, Seymour-Jackson E, Putti A, Millar NL. Management of de Quervain Tenosynovitis: A Systematic Review and Network Meta-Analysis. *JAMA Netw Open.* 2023;6(10):e2337001. doi: 10.1001/jamanetworkopen.2023.37001.
 31. Bosman R, Duraku LS, van der Oest MJW, et al. Surgical Treatment Outcome of de Quervain's Disease: A Systematic Review and Meta-analysis. *Plast Reconstr Surg Glob Open.* 2022;10(5):e4305. doi: 10.1097/GOX.0000000000004305.
 32. Lee HJ, Kim PT, Aminata IW, Hong HP, Yoon JP, Jeon IH. Surgical release of the first extensor compartment for refractory de Quervain's tenosynovitis: surgical findings and functional evaluation using DASH scores. *Clin Orthop Surg.* 2014;6(4):405-9. doi: 10.4055/cios.2014.6.4.405.
 33. Lee HJ, Kim PT, Aminata IW, Hong HP, Yoon JP, Jeon IH. Surgical release of the first extensor compartment for refractory de Quervain's tenosynovitis: surgical findings and functional evaluation using DASH scores. *Clin Orthop Surg.* 2014;6(4):405-9. doi: 10.4055/cios.2014.6.4.405.
 34. Okada M, Kutz JE. Excision of aberrant abductor pollicis longus tendon slips for decompression of de Quervain's disease. *J Hand Surg Eur Vol.* 2011;36(5):379-82. doi: 10.1177/1753193411401986.
 35. Bakhach J, Chaya B, Papazian N. Omega "Ω" Pulley Plasty for Surgical Management of DeQuervain's Disease. *J Hand Surg Asian Pac Vol.* 2018 un;23(2):170-5. doi: 10.1142/S2424835518500169.
 36. Vas L, Pai R. Complex Regional Pain Syndrome-Type 1 Presenting as deQuervain's Stenosing Tenosynovitis. *Pain Physician.* 2016;19(1):E227-34.
 37. Wu Z, Li S, Zhao X. The application of ChatGPT in medical education: prospects and challenges. *Int J Surg.* 2025;111(1):1652-3. doi: 10.1097/JS9.0000000000001887.
 38. Oliva F, Bartoli A, Sammaria G, Oliva G, Maffulli N. Telemedicine and Orthopedic Surgery: A Narrative Review. *Muscles Ligaments Tendons J.* 2023;13(3):353-9. doi: 10.32098/mltj.03.2023.01.
 39. Adelstein JM, Sinkler MA, Li LT, Chen R, Gillespie RJ, Calcei J. Assessing ChatGPT responses to frequently asked questions regarding total shoulder arthroplasty. *Seminars Arthroplasty: JSES.* 2024;34(2):416-24. doi: 10.1053/j.sart.2024.01.003.