Chapter. 3 DeQuervain's Disease (continued)

Question #1: What are the appropriate methods and approaches for the early identification and diagnosis of de Quervain's disease?

Inclusion Criteria

We included articles for this question if they reported data that could be used for evaluation of the test in diagnosing de Quervain's disease, and they included ten or more patients.

Evidence Base

We found no diagnostic studies that met the inclusion criteria.

Results

Three review articles stated that diagnosis of de Quervain's disease is made by the Finkelstein's test.[53,85,87] In this test, the patient makes a fist around the thumb, and the examiner deviates the wrist in an ulnar direction (away from the base of the thumb). If the patient experiences intense pain on the radial side of the wrist, the test is positive. All included treatment studies of de Quervain's disease (see question 3, below) listed Finkelstein's test among the inclusion criteria.[88,633-635] This suggests that Finkelstein's test is routinely used in diagnosis of this condition.

Conclusion

There is no published evidence by which one can assess the effectiveness of any test for DeQuervain's disease. Therefore it is not possible to reach evidence-based conclusions about these tests.

Question #2: What Are The Specific Indications For Surgery For de Quervain's Disease?

Published evidence does not directly address the specific indications for surgery for de Quervain's disease. Therefore, we describe the reported characteristics of patients who have received surgery for de Quervain's disease in published studies. The extent to which these patients represent typical surgical candidates is unclear. Patients included in published studies of a procedure are frequently a subset of patients who are candidates for that procedure. They may represent an unusual group of interest, or an optimized group most likely to benefit from the procedure. Therefore, the data presented here, while informative, may not accurately reflect the overall patient population. They do, however, represent the best data available, and is the most comprehensive compilation of de Quervain's disease patient characteristics compiled to date.

Excluded studies

As discussed in the Methods section, we retrieved articles identified by our literature searches according to certain *a priori* criteria. However, one of the retrieved studies did not meet our more specific inclusion criteria for this question. This study, and the reason we did not consider it for this question are shown in
Table 352.

Table 352. Excluded studies

Author and year	Reason for exclusion
Kay 2000[86]	Demographic information not reported separately for surgical and non-surgical patients

Evidence base

Three studies with a total of 160 patients contained information relevant to this question for patients with de Quervain's disease. Table 353 shows selected patient characteristics and reported surgical indications. Information not reported by these studies included race, extent of disease, pregnancy, menopause, oral contraceptive use, alcohol use, smoking status, whether patients were overweight, workers' compensation status, and whether the patient retained a lawyer.

Table 353. Specific indications for surgery for de Quervain's disease

Author/year	N	Mean age (range)	% female	Study design	Signs and symptoms	Occupations (n)	Specific indications for surgery
Ta et al. (1999) [88]	43	48 (24-73)	79.1	Retrospective stratified case series	Pain over radial aspect of wrist aggravated by excessive use of thumb, a positive Finkelstein test	Packer (10), domestic (9), secretary (7), machine operator (6), computer engineer (3), teacher (2), hospital orderly (2), salesperson (2), carpenter (1), and business executive (1)	Specific indications not reported
Witt et al. (1991) [633]	95	44 (16-75)	77	Prospective stratified case series	Pain radiating from radial styloid process to thumb and forearm, increased pain on passive movement of thumb and wrist, swelling and tenderness over first dorsal compartment, and positive result on Finkelstein testing	Housekeeping (26), Secretarial and clerical work (17), light manual labor (16), managerial or professional work (16), strenuous manual labor (4), music (2), education (2)	Failure of non-operative treatment
Yuasa et al. (1998) [634]	22	47 (21-67)	95.5	Retrospective case series	Radial wrist pain, tenderness over first extensor compartment, and positive Finkelstein's test results	NR	Failure of non-operative treatment

NR – Not reported

Conclusions

Two of the three studies that addressed this question reported that surgery was performed only on patients who did not benefit from conservative (non-operative) treatment.[633,634] However, with so few studies and so many unreported patient characteristics, one cannot assume that the present data are representative of the larger patient population with de Quervain's disease.

Question #3: What are the relative benefits and harms of various surgical and nonsurgical interventions for persons with de Quervain's disease?

For this question, we included any controlled trials (even retrospective) as long as at least two groups (treated or otherwise) were comparable. Study inclusion criteria for this question are listed under Methods (section).

Excluded studies

As discussed in the Methods section, we retrieved articles identified by our literature searches according to certain *a priori* criteria. However, not all of the retrieved studies met our more specific inclusion criteria for this question. These latter studies, and the reason we did not consider them for this question are shown in Table 354.

Table 354. Excluded studies

Author	Reason for exclusion
Kay 2000 [86]	Uncontrolled study
Ta et al. 1999 [88]	Uncontrolled study
Yuasa et al. 1998 [634]	Uncontrolled study
Witt et al. 1991 [633]	Uncontrolled study

Evidence base

After these exclusions, one trial describing 87 patients remained.

Internal validity

The criteria used to evaluate study quality were identical to those described for Question 3 under carpal tunnel syndrome. Table 355 shows the internal validity of the only study that met the inclusion criteria. Because this study was non-randomized, retrospective and unblinded, it is particularly susceptible to bias. The extent of such bias, if any, and its impact on interpretation of the results, can not be determined.

Table 355. Study quality

Author	Number of patients	Number of centers	Funded by a for-profit agency?	Study design	Prospective	Blinding	% Attrition	Intent to treat analysis	% Compliance
Weiss 1994 [635]	87	1	No	Non-randomized controlled trial	No	No	0	Yes	NR

NR – Not reported

Generalizability

Selected patient characteristics are presented in Table 356. Because there were so few studies (even counting excluded studies) evaluating treatment of de Quervain's disease, the generalizability of the study by Weiss et al. to the larger patient population cannot be determined. However, the study appears to be consistent with the epidemiological information reported in review articles of de Quervain's disease (see Introduction, de Quervain's disease, subheading epidemiology).

Weiss et al. presented little specific information related to occupation (Table 357), but as already noted, there are too few studies to determine the generalizability of this study to the larger patient population.

Table 356. Patient characteristics

Author	Number of patients	Mean age (range)	% female	Duration of condition mean and range (months)	% Patients with diabetes	% Patients with arthritis	% Patients with prevous relevant injuries	% Patients with other relevant nerve impingement conditions	% Patients with peripheral neuropathy	% Patients pregnant	% Patients on kidney dialysis	Did the study exclude patients with severe disease?	Did the study exclude patients with mild disease?
Weiss 1994 [635]	87	38 (17-72)	85.1	7 (0.25-36)	5.7	1.1	10.3	5.7	0	1.1	0	NR	NR

Table 357. Patient occupation

Author	Number of patients	% Patients employed	% Patients on Workers Compensation	% Patients retired	% Patients homemakers	Reported Occupations
Weiss 1994 [635]	87	NR	39.1	NR	NR	Heavy manual labor, lightlabor, keyboard or typing activities

Results

Weiss et al. found a statistically significant increase in the number of treatment successes after corticosteroid plus lidocaine (CS) injection compared to immobilization splints or splints plus injection (Table 358 and Table 359). Treatment successes were defined as patients with no or minimal symptoms who did not subsequently require surgery.

Table 358. Results of global assessment

Study	Number of wrists[a]	Global assessment patient-reported categories	Statistical significance of difference between groups
Weiss 1994 [635]	42 CS injection 37 immobilization splint 14 CS injection plus immobilization splint	29 successes, 13 failures 11 successes, 26 failures 8 successes, 6 failures	Fisher's exact test P <0.001

aResults were reported based on number of wrists, rather than patients, that received treatment.
CS – Corticosteroid plus lidocaine

Table 359. Success of nonsurgical treatments for de Quervain's disease

Study	Number of wrists[a]	Length of followup (months)	Which treatment was more successful?	Was the difference statistically significant?	Effect size Hedges' d (95% CI)
Weiss 1994 [635]	42 CS injection 37 immobilization splint 14 CS injection plus immobilization splint	Mean (range)[b] 13 (6-14)	CS injection	Yes	Injection vs splint: 0.91 (0.38 to1.44) Injection plus splint vs splint: 0.62 (-0.08 to 1.32)

aResults were reported based on number of wrists, rather than patients, that received treatment
bLength of followup only reported for patients who did not undergo eventual surgery (treatment successes)
CS – Corticosteroid plus lidocaine

Conclusions

Although one study found that corticosteroid plus lidocaine injection produced more treatment successes than immobilization splints among de Quervain's patients, there were design problems with this study. Because of these problems and the fact that only one study addressed this question, it is difficult to reach firm evidence-based conclusions

concerning the effectiveness of any treatment for de Quervain's disease. However, lack of evidence of an effect does not constitute evidence of lack of effect.

Question #4: Is there a relationship between specific clinical findings and specific treatment outcomes among patients with de Quervain's disease?

In addressing this question, we consider whether published literature suggests that there are clinical findings that predict positive or negative outcomes after treatment for de Quervain's disease. The studies we considered all attempted to identify predictors by using regression techniques or by comparing outcomes in different groups of patients with different pre-treatment clinical findings.

Excluded studies

We did not exclude any study that addressed this question.

Evidence base

Evidence that addresses this question is derived from one study of 43 patients.

Study quality

The criteria used to evaluate study quality were identical to those described for Question 4 under carpal tunnel syndrome. One retrospective study (Ta et al., 1999) addressed this question for patients with de Quervain's disease (Table 360).[88] Of 43 patients who received surgery, 31 had a septated first dorsal compartment. The authors attempted to identify predictor variables by performing a multiple logistic regression with descending stepwise variable selection.

Table 360. Study quality

Author	Prospective?	Methods used to identify predictor variables
Ta et al. (1999) [88]	No	Multiple logistic regression

Results

The results of the only study that addressed this question are shown in Table 361. Odds ratios for non-septated and septated patients were not significantly different for a global outcome (patient satisfaction) or complications.

Table 361. Relationship between clinical findings and treatment outcomes

Author	Treatment	Variables examined	Comparison groups	Outcomes	Results
Ta et al. (1999) [88]	Surgery (n = 43)	Age, gender, steroid treatment, septation, duration of symptoms, occupational status	Septation No (12) Yes (31)	Global outcome (patient satisfaction -yes/no) Complications (yes/no)	Odds Ratio (95% CI) 1.0 (referent) 0.53 (0.07-3.68) p = 0.61 1.0 (referent) 1.25 (0.79-9.66) p = 1.00

Conclusions

This question was addressed by only one relatively small retrospective study. This precludes a firm evidence-based answer to this question.

Question #5: Is there a relationship between duration of symptoms and specific treatment outcomes among patients with de Quervain's disease?

In addressing this question, we consider whether published literature suggests that duration of symptoms predicts positive or negative outcomes after treatment for de Quervain's disease. The studies we considered all attempted to identify predictors by using regression techniques or by comparing outcomes in different groups of patients with different duration of symptoms.

Excluded studies

As discussed in the Methods section, we retrieved articles identified by our literature searches according to certain *a priori* criteria. However, one study did not meet our more specific inclusion criteria for this question. This study, and the reason we did not consider it for this question are shown in Table 362.

Table 362. Excluded Studies

Author	Reason for exclusion
Witt et al. (1991) [633]	Stratified study with no duration of symptoms stratifications/outcome comparisons reported by other studies

Evidence base

After the above exclusion, there remained one study with 43 patients.

Study quality

The criteria used to evaluate study quality were identical to those described for Question 4 under carpal tunnel syndrome. Only one study addressed this question for patients with de Quervain's disease (Table 363). Ta et al. (1999) conducted a retrospective study that attempted to identify predictor variables with a multiple logistic regression in descending stepwise order.

Table 363. Study quality

Author/year	Prospective?	Methods used to identify predictor variables
Ta et al. (1999) [88]	No	Multiple logistic regression

Results

Table 364 shows the results of the study by Ta et al. Patients with a longer duration of symptoms were more likely to experience satisfaction after surgery.[88]

Table 364. Relationship between duration of symptoms and treatment outcomes among patients with de Quervain's disease

Author/ year	Treatment(s)	Variables examined	Comparison groups	Outcomes	Results
Ta et al. (1999) [88]	Surgery (n = 43)	Age, gender, steroid treatment, septation, duration of symptoms, occupational status	Duration of symptoms 1-3 months (n = 2) 4-6 months (n = 8) 7-9 months (n = 14) 10-12 months (n = 2) 13-15 months (n = 16) >15 months (n = 1)	Global outcome (patient satisfaction - yes/no)	Odds Ratio (95% CI) 1.0 (referent) 1.21 (0.75-2.36) 1.16 (0.91-2.03) 1.42 (1.12-2.78) 1.74 (1.08-2.24) 1.62 (1.04-3.12) p = 0.034
				Complications (yes/no)	1.0 (referent) 0.82 (0.54-1.71) 1.15 (0.72-1.86) 1.79 (0.46-2.53) 1.21 (0.63-1.85) 1.72 (0.89-2.65) p = 0.24

Conclusions

This question was addressed by only one relatively small retrospective study. This precludes a firm evidence-based answer to this question.

Question #6: Is there a relationship between factors such as patients' age, gender, socioeconomic status and/or racial or ethnic grouping and specific treatment outcomes among patients with de Quervains's disease?

In addressing this question, we consider whether published literature suggests that there are demographic variables that predict positive or negative outcomes after treatment for carpal tunnel syndrome. The studies we considered all attempted to identify predictors by using regression techniques or by comparing outcomes in different groups of patients with different pre-treatment demographic characteristics.

Excluded studies

As discussed in the Methods section, we retrieved articles identified by our literature searches according to certain *a priori* criteria. However, one of the retrieved studies did not meet our more specific inclusion criteria for this question. This study, and the reason we did not consider it for this question are shown in Table 365.

Table 365. Excluded studies

Author	Reason for exclusion
Witt et al. (1991) [633]	Stratified study with no demographic variable stratifications/outcome comparisons reported by other studies

Evidence base

After the above exclusion, there remained one study with 43 patients.

Study quality

The criteria used to evaluate study quality were identical to those described for Question 4. One study addressed this question for patients with de Quervain's disease (Table 366). Ta et al. (1999) conducted a retrospective study that attempted to identify predictor variables with a multiple logistic regression in descending stepwise order.

Table 366. Study quality

Author/year	Prospective?	Methods used to minimize differences between stratified groups	Is the stratification confounded?
Ta et al. (1999) [88]	No	Multiple logistic regression	No

Results

Table 367 shows the results of the study by Ta et al. They found that there was no statistically significant relationship between occupational status, age, or gender and patient satisfaction or complications.[88]

Table 367. Relationship between patient demographics and treatment outcomes

Author	Treatment(s)	Variables examined	Comparison groups	Outcomes	Results
Ta et al. (1999) [88]	Surgery (n = 43)	Age, gender, steroid treatment, septation, duration of symptoms, occupational status	Occupational status Unemployed (n = 12) Employed (n = 31)	Global outcome (patient satisfaction -yes/no) Complications (yes/no)	Odds Ratio (95% CI) 1.0 (referent) 3.60 (0.36-5.26) p = 0.36 1.0 (referent) 0.32 (0.12-3.78) p = 0.62
			Age (years) 21-30 (n = 3) 31-40 (n = 9) 41-50 (n = 14) 51-60 (n = 9) >60 (n = 8)	Global outcome (patient satisfaction-yes/no) Complications (yes/no)	Odds Ratio (95% CI) 0.92 (0.57-1.36) 0.80 (0.43-1.21) 1.06 (0.82-1.16) 1.02 (0.64-1.47) (referent) p = 0.16 1.06 (0.76-1.53) 0.72 (0.52-1.27) 0.94 (0.85-1.33) 0.88 (0.72-1.10) p = 0.41
			Gender Female (n = 34) Male (n = 9)	Global outcome (patient satisfaction-yes/no) Complications (yes/no)	Odds Ratio (95% CI) (referent) 0.40 (0.11-1.42) p = 0.54 (referent) 4.15 (0.54-35.10) p = 0.16

Conclusions

This question was addressed by only one relatively small retrospective study. This precludes a firm evidence-based answer to this question.

Question #7: What are the surgical and nonsurgical costs or charges for treatment of de Quervain's disease?

According to the Medicare Provider Analysis and Review (MEDPAR) database, which covers hospital inpatient services, average total charges per patient for the DRG (diagnosis-related group) of hand or wrist procedures (excepting major joint procedures) without complications or comorbidities are $7,408.14 (calculated by dividing total charges by number of discharges). The Median Costs for Hospital Outpatient Services Dataset contains median costs for services that are reimbursed under Medicare for the hospital outpatient prospective payment system. The reported median cost for application of a short arm static splint is $72.69.

Question #8: For persons who have had surgery for de Quervain's disease, what are the most effective methods for preventing the recurrence of symptoms, and how does this vary depending on subject characteristics or other underlying health problems?

There were no published studies that addressed this question.

Question #9: What instruments, if any, can accurately assess functional limitations in an individual with de Quervain's disease?

There were no published studies that addressed this question.

Question #10: What are the functional limitations for an individual with de Quervain's disease before treatment?

There were no published studies that addressed this question.

Question #11: What are the functional limitations of an individual with de Quervain's disease after treatment?

There were no published studies that addressed this question.