
實證醫學病例討論

Present PGY 蘇偉智

Supervisor VS 蘇裕峰

99.01.28

Clinical scenarios

Patient's Profile

- Name :徐○羚
 - Gender: female
 - Age: 53 years old
 - Chart number: 23468390
 - Date of admission :2009/11/10
 - Marriage: married
 - Education: elementary school
 - Occupation : housewife
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- Chief complaint:
 - Progressive right hand numbness and weakness for more than 1 year
 - The 53-year-old female with the underlying disease of
 - hypertension for 2 years with medication control
 - gastric ulcer status post treatment.
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- progressive right hand numbness and weakness for more than 1 year
 - Numbness of the first four fingers .
 - aggravated when riding a motorcycle.
 - denied previous trauma.
 - She is a housewife and often have to lift heavy things and overuse of the right wrist.
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- Associated symptom and signs:
 - Neck tightness (+)
 - no radiation to the upper limbs
 - paresthesia (+/-)
 - handedness: right handed
 - muscle weakness (+)
 - midnight shake (+).
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- She came to Dr. 蘇裕峰 for help.
 - Cervical spine x-ray revealed spondylosis C4-5-6.
 - Nerve conduction velocity: right median nerve delay of latency
-

■ Impression

- carpal tunnel syndrome.

■ Plan

- neurolysis of right median nerve

■ Response

- Numbness relief after operation
-

Background questions

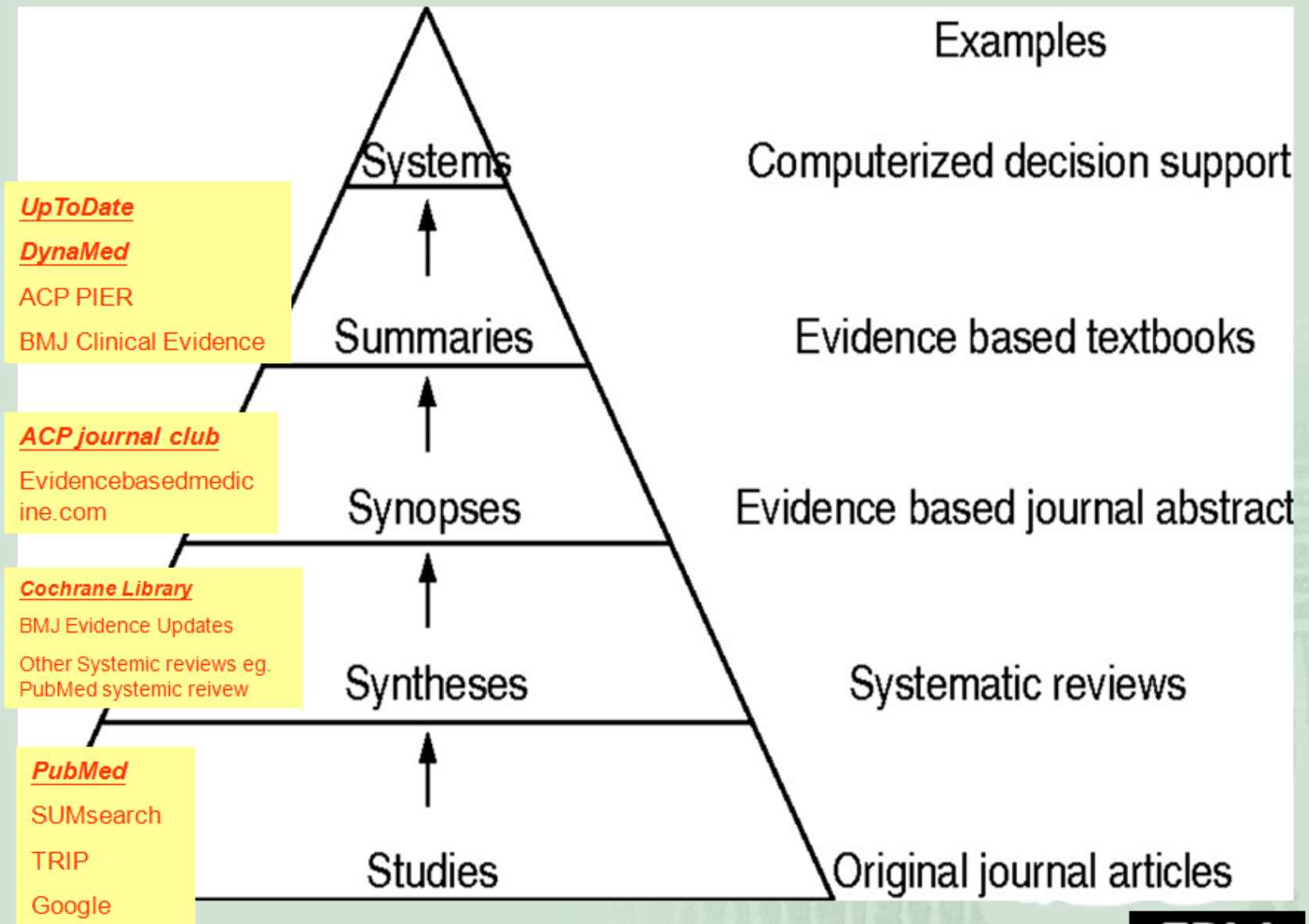
- What are the treatment options for carpal tunnel syndrome ?
 - ❑ Wrist splinting
 - ❑ Glucocorticoid injection
 - ❑ Oral glucocorticoids
 - ❑ Yoga
 - ❑ Carpal bone mobilization
 - ❑ Nerve gliding
 - ❑ Ultrasound therapy
 - ❑ NSAIDS and other oral medications
 - ❑ Electrical, magnetic, and laser therapy
 - ❑ Surgery
-

ASKING - PICO

- **P**: patient has carpal tunnel syndrome
 - **I**: surgical treatment
 - **C**: non-surgical therapy
 - **O**: does surgical treatment has better outcome than non-surgical therapy ?
-

The "5S" levels of organisation of evidence from healthcare research

Brian Haynes, R Evid Based Med 2006;11:162-164



ACQUIRE

- **Keyword:**
 - carpal tunnel syndrome
 - Treatment
 - surgery
 - non-surgical
 - **Database:** UpToDate
-

▼ Search Results for "carpal tunnel syndrome and Treatment and surgery and non-surgical"

▼ Topic Outline

All search results | Prioritize adult topics | Prioritize pediatric topics | Prioritize patient topics

- Surgery for carpal tunnel syndrome
- Treatment of carpal tunnel syndrome
- Treatment of acromegaly
- Overview of upper extremity peripheral nerve syndromes
- Desmoid tumors
- Complications and management of the mucopolysaccharidoses
- Dialysis-related amyloidosis
- Treatment of HIV-associated lipodystrophy
- Neurologic manifestations of rheumatoid arthritis
- Neurologic disorders complicating pregnancy
- What's new in rheumatology
- Localized scleroderma in childhood
- Rheumatic and bone disorders associated with acromegaly
- Joint aspiration or injection in adults: Complications
- Growth hormone deficiency in adults

▲ No Topic Outline Available.

ACQUIRE

- **Keyword:**
 - carpal tunnel syndrome
 - Treatment
 - surgery
 - non-surgical
 - **Database:** Pub Med
-



U.S. National Library of Medicine
National Institutes of Health

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carpal tunnel syndrome and Treatment and surgery and non-surgical

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Results: 14

- [Surgery versus non-surgical therapy for carpal tunnel syndrome: a randomised parallel-group trial.](#)
 1. Jarvik JG, Comstock BA, Kliot M, Turner JA, Chan L, Heagerty PJ, Hollingworth W, Kerrigan CL, Deyo RA.
 Lancet. 2009 Sep 26;374(9695):1074-81.
 PMID: 19782873 [PubMed - indexed for MEDLINE]
[Related articles](#)
- [Non-surgical treatment in carpal tunnel syndrome.](#)
 2. Atroshi I, Gummesson C.
 Lancet. 2009 Sep 26;374(9695):1042-4. No abstract available.
 PMID: 19782855 [PubMed - indexed for MEDLINE]
[Related articles](#)
- [Surgical versus non-surgical treatment for carpal tunnel syndrome.](#)
 3. Verdugo RJ, Salinas RA, Castillo JL, Cea JG.
 Cochrane Database Syst Rev. 2008 Oct 8;(4):CD001552. Review.
 PMID: 18843618 [PubMed - indexed for MEDLINE]
[Related articles](#)
- [A practical electrophysiological guide for non-surgical and surgical treatment of carpal tunnel syndrome.](#)
 4. Chang CW, Wang YC, Chang KF.
 J Hand Surg Eur Vol. 2008 Feb;33(1):32-7.
 PMID: 18332017 [PubMed - indexed for MEDLINE]

Find related data

Database: Select

Find items

Search details

```
("carpal tunnel syndrome"[MeSH Terms] OR ("carpal"[All Fields] AND "tunnel"[All Fields] AND "syndrome"[All Fields]))
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Search

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Recent activity

Surgery versus non-surgical therapy for carpal tunnel syndrome: a randomised parallel-group trial.

Jarvik JG, Comstock BA, Kliot M, Turner JA, Chan L, Heagerty PJ, Hollingworth W, Kerrigan CL, Deyo RA.

Department of Radiology, School of Medicine, University of Washington, Seattle, WA, USA. jarviks@comcast.net

Comment in:

Lancet. 2009 Sep 26;374(9695):1042-4.

BACKGROUND:

- A previous **randomised controlled trial** reported greater efficacy of surgery than of splinting for patients with carpal tunnel syndrome.
 - Our aim was to **compare surgical versus multi-modality, non-surgical treatment** for patients with carpal tunnel syndrome without denervation.
 - We hypothesised that surgery would result in improved functional and symptom outcomes.
-

METHODS:

- randomly assigned 116 patients from eight academic and private practice centres,
 - using computer-generated random allocation stratified by site,
 - carpal tunnel surgery (n=57)
 - non-surgical treatment (including hand therapy and ultrasound; n=59).
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- The primary outcome was hand function measured by the **Carpal Tunnel Syndrome Assessment Questionnaire** (CTSAQ) at 12 months assessed by research personnel unaware of group assignment.
 - Analysis was by intention to treat.
 - This trial is registered with ClinicalTrials.gov, number NCT00032227.
-

FINDINGS:

- 44 (77%) patients assigned to surgery underwent surgery.
 - At 12 months, 101 (87%) completed follow-up and were analysed (49 of 57 assigned to surgery and 52 of 59 assigned to non-surgical treatment).
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- Analyses showed a significant 12-month adjusted advantage for surgery in function (CTSAQ function score: Delta -0.40, 95% CI 0.11-0.70, $p=0.0081$) and symptoms (CTSAQ symptom score: 0.34, 0.02-0.65, $p=0.0357$).
 - There were no clinically important adverse events and no surgical complications.
-

INTERPRETATION:

- Symptoms in both groups improved, but **surgical treatment led to better outcome** than did non-surgical treatment.
 - However, the clinical relevance of this difference was modest.
 - Overall, our study confirms that surgery is useful for patients with carpal tunnel syndrome without denervation.
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APPRAISAL

Oxford Centre for Evidence-based Medicine Levels of Evidence (May 2001)⁴

Level	Therapy/Prevention, Aetiology/Harm	Prognosis	Diagnosis	Differential diagnosis/symptom prevalence study	Economic and decision analyses
1a	SR (with homogeneity) of RCTs	SR (with homogeneity) of inception cohort studies; CDR+ validated in different populations	SR (with homogeneity) of Level 1 diagnostic studies; CDR+ with 1b studies from different clinical centres	SR (with homogeneity) of prospective cohort studies	SR (with homogeneity) of Level 1 economic studies
1b	Individual RCT (with narrow Confidence Interval)	Individual inception cohort study with > 80% follow-up; CDR+ validated in a single population	Validating** cohort study with good+++ reference standards; or CDR+ tested within one clinical centre	Prospective cohort study with good follow-up****	Analysis based on clinically sensible costs or alternatives; systematic review(s) of the evidence; and including multivariate sensitivity analyses
1c	All or none	All or none case-series	Absolute SpPlus and SnNone++	All or none case-series	Absolute better-worse or worse-worse analyses +++
2a	SR (with homogeneity) of cohort studies	SR (with homogeneity) of either retrospective cohort studies or stratified control groups in RCTs	SR (with homogeneity) of Level >2 diagnostic studies	SR (with homogeneity) of 2b and better studies	SR (with homogeneity) of Level >2 economic studies
2b	Individual cohort study (including low quality RCT; e.g., <80% follow-up)	Retrospective cohort study or follow-up of stratified control patients in a RCT; Derivation of CDR+ or validated on split-sample§§ only	Exploratory** cohort study with good++ reference standards; CDR+ after derivation, or validated only on split-sample§§ or databases	Retrospective cohort study, or poor follow-up	Analysis based on clinically sensible costs or alternatives; limited review(s) of the evidence, or single studies; and including multivariate sensitivity analyses
2c	"Orbomes" Research; Ecological studies	"Orbomes" Research		Ecological studies	Audit or orbomes research
3a	SR (with homogeneity) of case-control studies		SR (with homogeneity) of 3b and better studies	SR (with homogeneity) of 3b and better studies	SR (with homogeneity) of 3b and better studies
3b	Individual Case-Control Study		Non-cohort study, or without consistently applied reference standards	Non-cohort cohort study, or very limited population	Analysis based on limited alternatives or costs, poor quality estimates of data, but including sensitivity analyses incorporating clinically sensible variations
4	Case-series (and poor quality cohort and case-control studies§§)	Case-series (and poor quality prognostic cohort studies***)	Case-control study, poor or no independent reference standard	Case-series or dispersed reference standards	Analysis with no sensitivity analyses
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on economic theory or "first principles"

Work sheet

所取樣本是否有臨床代表性，是否與我的病人差不多？	是
分組是否有隨機盲法分組	是
對照組和實驗組進入實驗時是否相似？	是
是否病人都被放在原來的組別中做分析？	是
是否醫師和病人對治療都不知情？	未知
失去追蹤個案數是否過多？ 5/20% rule	否

是否清楚描述並且是可行的	是
是否清楚描述並且是可行的	是

是否選用客觀的測量結果	是
是否使用盲法(測量者與受試皆不知受試者被分在那一組)	未知

測量結果的時間點是否合乎邏輯	是
追蹤是否夠久	是

APPLY

- surgical treatment led to better outcome than did non-surgical treatment.



Thank you for your attention
