Evidence-**B**ased **M**edicine Conference

R2 施秉庚

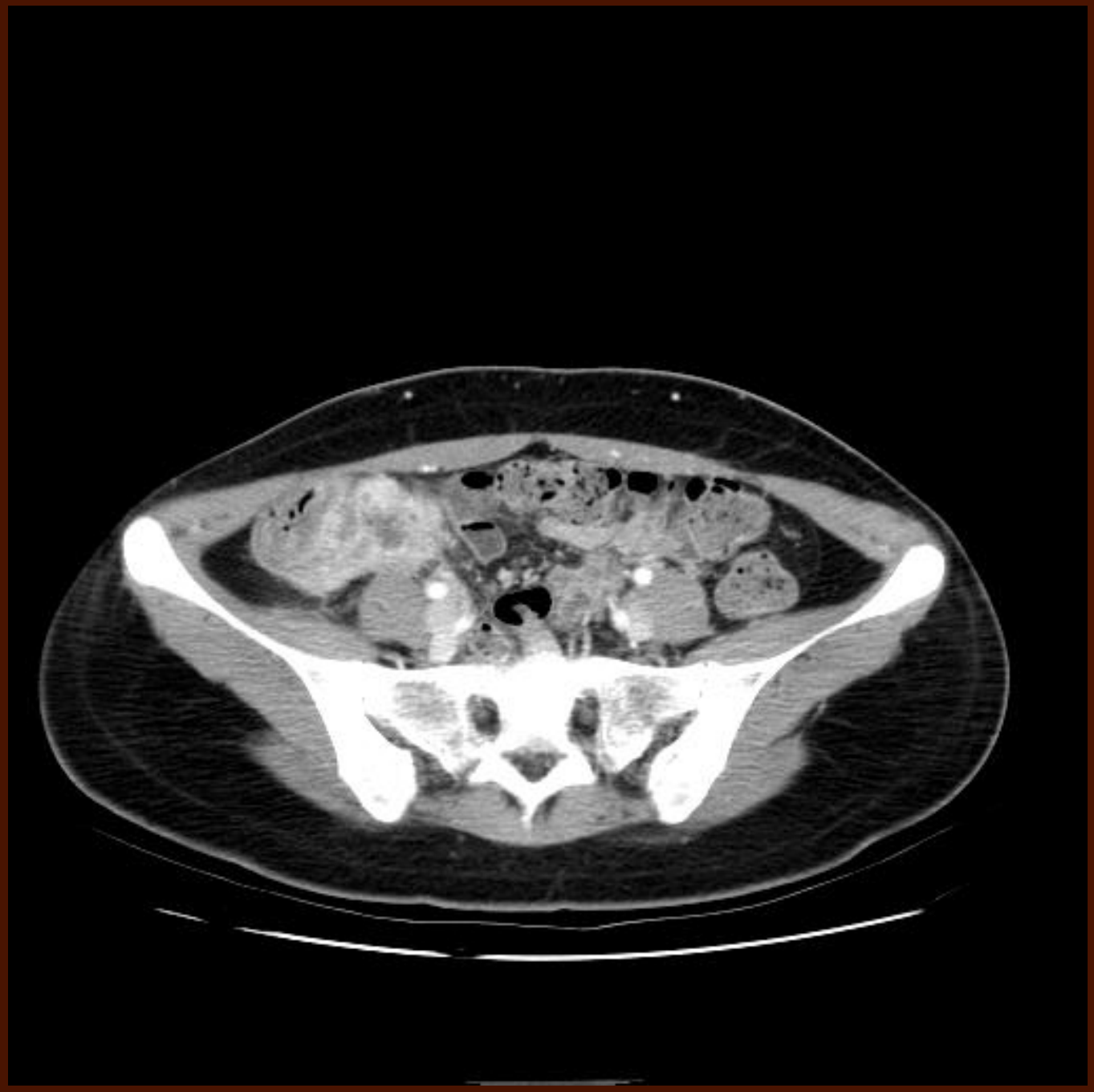
2009.8.26

Patient Profile

- Name:莊詠棠
- Gender: female
- Age: 20 years old
- Chart number: 12236679
- Admission date: 2009.8.23

Chief complaints

- Right lower abdominal pain noted for 1 week



收到檢體	Blood	980823 08:4			980823	0841
Sugar	Blood	110	65~109;	mg/dL	980823	0841
SGOT	Blood	20	10~42;	IU/L	980823	0841
SGPT	Blood	23	10~40;	IU/L	980823	0841
CRP (定量)	Blood	68.52	<5.0;	mg/L	980823	0841
Urea N	Blood	7.0	7~18;	mg/dL	980823	0841
Creatinine	Blood	0.59	0.6~1.3;	mg/dL	980823	0841

收到檢體	Blood	980823 08:4			980823	0841
WBC	Blood	14.8	4.4~11.3;<1day:14.3~	x1000/	980823	0841
RBC	Blood	4.50	男:4.5~5.9;女:4.0~5.	x10^6/	980823	0841
Hgb	Blood	12.1	男:14~17.5;女:12.3~1	g/dL	980823	0841
Hct	Blood	36.4	男:41.5~50.4;女:35.9	%	980823	0841
MCV	Blood	80.9	80.0~96.1;<1day:103.	fl	980823	0841
MCH	Blood	26.9	27.5~33.2;<1day:33.9	Pg	980823	0841
MCHC	Blood	33.3	33.4~35.5;<1day:32.5	%	980823	0841
PLT	Blood	330	172~450;	x1000/	980823	0841
RDW	Blood	14.3	11.6~14.6;	%	980823	0841
NEUT	Blood	80.9	40~75;<1day:61.2~79.	%	980823	0841
EOSIN	Blood	0.7	1~7;<1day:0~3.3; 1	%	980823	0841
BASO	Blood	0.3	0~2;	%	980823	0841
LYMPH	Blood	12.5	20~50;<1day:12.9~27.	%	980823	0841
MONO	Blood	5.6	1~10;<1day:3.5~9.5;	%	980823	0841

Assessment

- Acute appendicitis

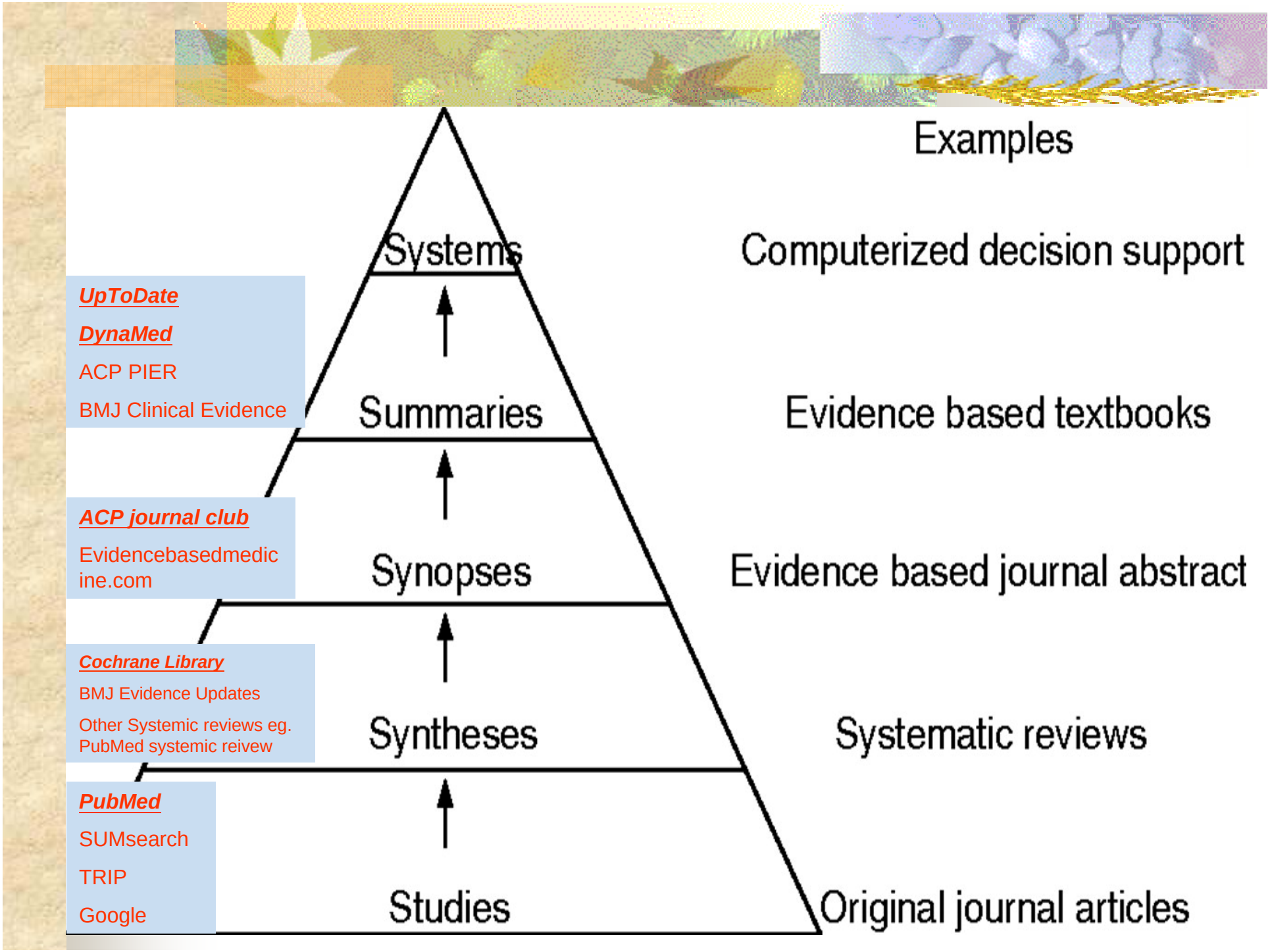
Treatment

- Emergent appendectomy

Foreground Questions

Will the laparoscopic appendectomy have better outcome than open appendectomy ?

- Patient/Problem
  - Patients with appendicitis
- Intervention
  - Laparoscopic appendectomy
- Comparison
  - Open appendectomy
- Outcome
  - Duration of admission, mobidity


Examples
Systems
Computerized decision support
UpToDate
DynaMed
ACP PIER
BMJ Clinical Evidence
Summaries
Evidence based textbooks
ACP journal club
Evidencebasedmedicine.com
Synopses
Evidence based journal abstract
Cochrane Library
BMJ Evidence Updates
Other Systemic reviews eg. PubMed systemic reivew
Syntheses
Systematic reviews
PubMed
SUMsearch
TRIP
Google
Studies
Original journal articles

Synopses *-ACP journal club*

- Key words:
  - Laparoscopic appendectomy

- Article title:
  - Laparoscopic appendectomy was better than open appendectomy for subjective full recovery but not for duration of sick leave

- Patients:
  523 patients who were >= 15 years of age and had suspected acute appendicitis. Exclusion criteria were contraindications to laparoscopic surgery (e.g., pregnancy, drug abuse, psychiatric disorders, previous abdominal operations, bleeding diathesis, or anaesthesiological contraindications). Follow-up was 96%.
- Intervention:
  Patients were allocated to laparoscopic (n = 244) or open (n = 256) appendectomy. Surgeons who had previously done > **5 appendectomies and > 30 cholecystectomies** by laparoscopy did the laparoscopic surgery with a 3-cannula technique (11, 11, and 5 mm) and occasional use of a 4th cannula (5 mm). Surgeons who had previously **done > 10 open appendectomies** did the open surgery with a McBurney incision in the right iliac fossa.

- Main results:
  The median time to recovery was shorter in the laparoscopic group than in the open group (13 vs 21 d, P < 0.001).

  A trend existed toward less sick leave in the laparoscopic group than in the open group (median sick leave 11 vs 14 d, P = 0.06).

  Patients in the laparoscopic group reported less pain than did patients in the open group (mean score difference 0.6 {95% CI 0.2 to 1.0}* on day 1; 0.7 {CI 0.4 to 1.0}* on day 7; 0.3 {CI 0.1 to 0.5}* on day 14; P < 0.002).

  Functional status on day 7 was better in the laparoscopic group than in the open group (mean score 3.8 vs 4.5, P < 0.001).

  No difference existed between groups for complications .

- Conclusions:
  In patients with suspected acute appendicitis, laparoscopic appendectomy was better than open appendectomy for **subjective full recovery, pain, and functional status**. Duration of sick leave and incidence of complications was similar for both procedures.

Syntheses

Cochrane Central Register of Controlled Trials

- Key words:
  - Laparoscopic appendectomy

- Article title:
  - Laparoscopic versus open surgery for suspected appendicitis

- Main resultsWe included 54 studies, of which 45 compared LA (with or without diagnostic laparoscopy) vs. OA in adults. Wound infections were less likely after LA than after OA (OR 0.45; CI 0.35 to 0.58), but the incidence of intraabdominal abscesses was increased (OR 2.48; CI 1.45 to 4.21). The duration of surgery was 12 minutes (CI 7 to 16) longer for LA. Pain on day 1 after surgery was reduced after LA by 9 mm (CI 5 to 13 mm) on a 100 mm visual analogue scale. Hospital stay was shortened by 1.1 day (CI 0.6 to 1.5). Return to normal activity, work, and sport occurred earlier after LA than after OA. While the operation costs of LA were significantly higher, the costs outside hospital were reduced. Five studies on children were included, but the result do not seem to be much different when compared to adults. Diagnostic laparoscopy reduced the risk of a negative appendectomy, but this effect was stronger in fertile women (RR 0.20; CI 0.11 to 0.34) as compared to unselected adults (RR 0.37; CI 0.13 to 1.01).

- Authors' conclusionsIn those clinical settings where surgical expertise and equipment are available and affordable, diagnostic laparoscopy and LA (either in combination or separately) seem to have various advantages over OA. Some of the clinical effects of LA, however, are small and of limited clinical relevance. In spite of the mediocre quality of the available research data, we would generally recommend to use laparoscopy and LA in patients with suspected appendicitis unless laparoscopy itself is contraindicated or not feasible. Especially young female, obese, and employed patients seem to benefit from LA.

Apply the Summary to the Patient

- Laparoscopic surgery for acute appendicitis has been proposed to have advantages over conventional surgery

Studies

- Pubmed
  - Key words:
    - laparoscopic appendectomy
    - open appendectomy
  - Article title:
  - Laparoscopic versus open appendectomy: a prospective randomized comparison

Laparoscopic versus open appendectomy: a prospective randomized comparison

- Background Whether laparoscopy offers a benefit over open surgery in the management of acute appendicitis or not remains a subject of controversy despite the publication of numerous randomized studies. This study aimed to compare laparoscopic appendectomy (LA) with open appendectomy (OA) and to ascertain its therapeutic benefit.

Methods:

---Methods Adult patients older than 14 years presenting with signs and symptoms suggestive of acute appendicitis were randomized to undergo either LA or OA from January 2006 to December 2007. Comparisons were based on operating time, time until return to a general diet, time until return to normal activity and work, length of hospital stay, billed charges, and postoperative complications

Table 1 Clinicopathologic characteristics of the patients

	LA	OA
No. of patients	112	108
Mean age (years)	28.5	27.3
Male:female	1.5:1	1.6:1
Mean height (cm)	167.1	165.7
Mean weight (kg)	75.0	72.8
Previous surgeries	5	8
WBC > 10 K: *n* (%)	77(68.8)	67(62.0)
Temperature > 38°C: *n* (%)	35(31.2)	41(38.0)
Acute appendicitis: *n* (%)	89(79.5)	86(79.6)
Perforated appendicitis: *n* (%)	18(16.1)	16(14.8)

LA laparoscopic appendectomy; *OA* open appendectomy; *WBC* white blood cell count; K, 1000

Table 2 Clinical data for the laparoscopic appendectomy (LA) an open appendectomy (OA) groups

Clinical data	LA	OA	*p*-Valu
Operating time (min)	30 ± 15.2	28.7 ± 16.3	>0.05
Hospital stay (days)	4.1 ± 1.5	7.2 ± 1.7	<0.05
Time until return to the general diet (h)	20.2 ± 12.4	36.5 ± 10	<0.05
Days until normal activity	9.1 ± 4.2	13.7 ± 5.8	<0.05
Days until work	21.2 ± 3.5	27.7 ± 4.9	<0.05
Billed charges (yuan)	5,720.3 ± 115.7	5,310 ± 575.4	>0.05

Table 3 Postoperative complications

Complications	LA *n* (%)	OA *n* (%)
Wound infection	0	14 (13)
Abdominal abscess	2 (1.8)	9 (8.3)
Paralytic ileus	0	8 (7.4)
Total	2 (1.8)	31 (28.7)

- CONCLUSION: Laparoscopic appendectomy is a useful tool in the treatment of acute appendicitis. Its advantages lie in its minimal invasiveness, its better cosmetic outcome, its lower rate of complications based on surgical expertise and state-of-the-art equipment. It can be recommended as an adoptable method for the routine patient with appendicitis

Apply the Study to the Patient

- Laparoscopic surgery for acute appendicitis has been proposed to have advantages over conventional surgery

Appraisal

AAMPICOT

- **A**: Does this paper answer your question?
  Yes.

- **A**:
  - Is the author an expert of the field?
    Yes.
  - Is there any conflict of interest

  not mentioned

Method:證據等級(針對Studies這篇)

Resuscitating patients with early severe sepsis: a Canadian multicentre observational study

Level	與[治療/預防/病因/危害]有關的文獻
1a	用多篇RCT所做成的綜合性分析(SR of RCTs)
1b	單篇RCT(有較窄的信賴區間)
1c	All or none
2a	用多篇世代研究所做成的綜合性分析
2b	單篇cohort及低品質的RCT
2c	Outcome research / ecological studies
3a	SR of case-control studies
3b	Individual case-control studies
4	Case-series(poor quality :cohort / case-control studies)
5	沒有經過完整評讀醫學文獻的專家意見

Grades of Recommendation

A	consistent level 1 studies
B	consistent level 2 or 3 studies ***or*** extrapolations from level 1 studies
C	level 4 studies ***or*** extrapolations from level 2 or 3 studies
D	level 5 evidence ***or*** troublingly inconsistent or inconclusive studies of any level

P

- Patients included into the study met one of the following criteria

--- Adult patients older than 14 years presenting with signs and symptoms suggestive of acute appendicitis were randomized to undergo either LA or OA from January 2006 to December 2007

I

- laparoscopic appendectomy

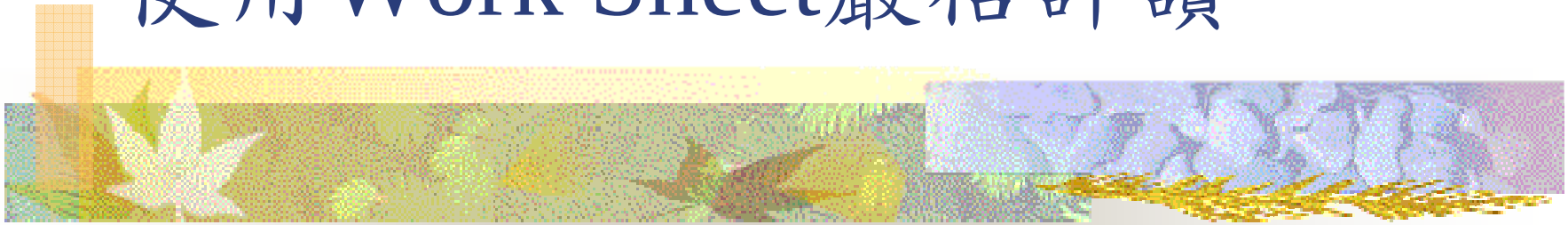
C

- open appendectomy

O

- Comparisons were based on operating time, time until return to a general diet, time until return to normal activity and work, length of hospital stay, billed charges, and postoperative complications

使用Work Sheet嚴格評讀



Diagnosis Worksheet

Are the results of this systematic review of therapy valid?	
Is it a systematic review of randomised trials of the treatment you're interested in?	Yes
Does it include a methods section that describes: finding and including all the relevant trials? assessing their individual validity?	Yes
Were the results consistent from study to study?	Yes

Apply-臨床應用

結合醫學倫理方法

將study的結果應用在病人身上

醫療現況	病人意願
根據研究所得， laparoscopic appendectomy比open appendectomy有較佳之癒後。	患者及家屬均希望進行腹腔鏡手術。
生活品質	社會脈絡
傷口小，符合病人美觀上的要求 。	

總結與討論

- laparoscopic appendectomy比open appendectomy有較佳之癒後， 但值班醫師經驗不足以進行laparoscopic appendectomy ，因此最後仍進行open appendectomy 。