LETTERS

Disease of the rotator cuff

Rotator cuff syndrome does not exist

EDITOR,—In their paper on treatment for rotator cuff disease Jens Ivar Brox and colleagues make several surprising statements.[1] They say that among the criteria for inclusion in the trial was pain during two of the three isometric-eccentric tests (abduction at 0° and 30° and external rotation) and that the diagnosis was confirmed if pain was appreciably reduced after lignocaine was injected anteriorly into the subacromial space. The reference cited is Cyriax's *Textbook of Orthopaedic Medicine*.[2] But such statements are nowhere to be found in Cyriax's book: the phrase isometric-eccentric does not appear, six isometric tests (not three) are described in the examination of the shoulder, and local anaesthesia to the subacromial space (I presume the subacromial bursa is meant) is not mentioned as a diagnostic test in any lesion of the rotator cuff (although it is described, with differences in technique, in the diagnosis of subacromial bursitis). Furthermore, Cyriax argues convincingly that the rotator cuff syndrome does not exist.

In addition, impingement syndrome is not defined, but a paper by Neer is cited.[3] In this paper the main criterion for the diagnosis appears to depend on eliciting a positive impingement test result, which seems to be the same as a painful arc; this is a physical sign not a diagnosis. Incidentally, the subdivision of this syndrome into stages I, II, and III is purely academic because, as Neer states, "The symptoms and physical signs in all three stages of impingement are almost identical." Impingement syndrome is thus reminiscent of periarthritis—a meaningless term since the tissue containing the lesion is not specified.

The rotator cuff consists of the tendons of the subscapularis, supraspinatus, infraspinatus, and teres minor muscles blended with the fibrous capsule of the shoulder joint. Cyriax clearly describes how, by interpretation of the physical signs elicited by a systematic clinical examination, it is usually a straightforward matter to determine which part of the rotator cuff is at fault when pain arises from this structure[2]; when this is done symptoms can be satisfactorily relieved by the accurate placement of a local steroid infiltration into the relevant tissue.[4,5] Thus, the cumbersome approach of prolonged courses of exercises or arthroscopic surgery is unnecessary.

GABRIEL SYMONDS

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1 Brox JI, Staff PH, Ljunggren AE, Brevik JI. Arthroscopic surgery compared with supervised exercises in patients with rotator cuff disease (stage II impingement syndrome). *BMJ* 1993;307:899-903. (9 October.)

Advice to authors

Priority will be given to letters that are less than 400 words long and are typed with double spacing. All authors should sign the letter. Please enclose a stamped addressed envelope for acknowledgment.

2 Cyriax J. *Textbook of orthopaedic medicine.* Vol I. London: Baillière Tindall, 1982.
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Consider subacromial injection therapy

EDITOR,—Jens Ivar Brox and colleagues show that arthroscopic subacromial decompression can be useful in the management of rotator cuff disease.[1] Patients included in their study were of a wide age range (18-66) and with a minimum of only three months of symptoms unresponsive to conservative measures. As the authors point out, most cases respond to conservative management. However, the conservative measures used in this study did not include subacromial injection, which is of use not only as a diagnostic tool—Neer's impingement test,[2] as used by Brox and colleagues—but also as a simple and effective treatment when corticosteroid is used, which may relieve symptoms permanently.[3]

It must be emphasised that factors influencing the decision for surgical intervention include the age, activity levels, and expectations of the patient; the severity and duration of the symptoms; and previous treatment. Factors favouring surgery include a young active patient with severe symptoms. Hawkins and Brock advised surgical intervention in a patient with an intact rotator cuff only after at least one year of conservative management.[4] Surgical intervention will also be limited by financial constraints, particularly if no overall benefit is shown in comparison with less expensive treatment such as supervised exercises. Long term follow up is necessary to assess the role of arthroscopic surgery in the management of rotator cuff disease.

C A SPEED

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1 Brox JI, Staff PH, Ljunggren AE, Brevik JI. Arthroscopic surgery compared with supervised exercises in patients with rotator cuff disease (stage II impingement syndrome). *BMJ* 1993;307:899-903. (9 October.)
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Authors' reply

EDITOR,—Cyriax describes, by interpretation of six isometric tests, how symptoms can be located to different parts of the rotator cuff. Electromyographic analyses, however, have not confirmed the specificity of these tests (K Harms-Ringdahl and J Bao, third European conference of research in rehabilitation, Rotterdam, June 1988). The inclusion criteria in our study are thoroughly described: we did not attempt to distinguish between inflammation of the supraspinous and the infraspinous tendon, and we further modified the criteria described by Cyriax by requiring the patients to do an eccentric muscle contraction, which may be more painful than the isometric test.

The impingement sign is positive if pain is elicited by compressing subacromial soft tissue between the acromion and the humeral head. This is achieved by stabilising the scapula and simultaneously flexing and internally rotating the patient's shoulder. The impingement test is positive if pain is appreciably reduced by injecting lignocaine into the subacromial space. In some people the subacromial bursa is missing, and anatomical variations have been described.[1] As we did not verify the location of injected drugs by bursography, we simply stated that lignocaine was injected into the subacromial space.

The impingement syndrome describes the mechanisms by which pain is elicited, while rotator cuff disease refers to the structures involved (tendons and bursa). Subdivisions can be made according to pathoanatomical findings: tendinitis (acute inflammation), tendinosis (chronic inflammation and degeneration), and rupture. Accurate distinction between acute and chronic inflammation and degeneration requires histological examination. Immunohistochemical typing of the subacromial bursal tissue has shown a typical mononuclear cell infiltrate.[2] Soft tissues can also be visualised by arthroscopic surgery and magnetic resonance imaging. The clinical relevance of pathological findings is difficult to interpret, as stated by Olsson.[3] He did not find any association between shoulder pain and macroscopic findings at necropsy.

Symonds stated that symptoms can be satisfactorily relieved by steroid injection. Kessel and Watson found that this method of treatment gave good results in about two thirds of patients.[4] However, all the patients included in our study had had previous steroid injection. Others have also reported poor long term outcome after this treatment.[5] Thus, a prolonged course of exercises is an alternative to arthroscopic surgery in such patients.

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Selective decontamination of the digestive tract

Benefit remains unproved

EDITOR,—Although meta-analysis has become popular, its value is limited when studies differ with regard to design, randomisation, population of patients, diagnostic procedures, and definitions. In its meta-analysis the Selective Decontamination of the Digestive Tract Trialists' Collaborative Group noted large differences among the studies.[1] Thus an analysis of carefully designed studies that excluded any observer bias (that is, double blind,

placebo controlled) and used accurate methods to diagnose pneumonia (that is, bronchoscopic techniques) would be most informative. Only three of the 22 trials fulfilled these criteria.[2-4] and another study was reported recently.[5] Two of these studies found that selective decontamination of the digestive tract had no beneficial effects on the incidence of pneumonia.[4,5] In the meta-analysis, however, four other double blind studies were included in the subanalysis of studies that used protected catheters for dignosing pneumonia.[6-9] Yet protected bronchial brushing was used by Rocha *et al* in "the latest patients"[6] and by Rodriguez-Rolden *et al* in only six patients,[7] was "mandatory but not necessary," in another study[8] or was not used at all as Pugin *et al* used a "clinical pulmonary infection score."[9]

The reported incidence of pneumonia in the different trials of selective decontamination of the digestive tract needs critical appraisal. For instance, of the 47% of control patients who developed pneumonia in Rocha *et al*'s study, 72% developed "early" pneumonia, which in other studies was probably called primary pneumonia.[6] The incidence of "late" pneumonia was 13% (7/54 and 6/47) in both groups of patients.[6] Cockerill *et al* included patients with purulent tracheobronchitis in their figures whereas the incidence of true pneumonia was 5% (4/75) and 4% (3/75) in control patients and patients who had selective decontamination of the digestive tract, respectively.[10]

When the trials are classified according to the beneficial effect of selective decontamination of the digestive tract on the incidence of pneumonia (table) the incidence among patients who had selective decontamination was similar. As the incidence of pneumonia among control patients was higher in studies advocating selective decontamination, however, the effect seems to be determined by the incidence of pneumonia in the control groups: selective decontamination seemed to be beneficial only in intensive care units in which there was a high incidence. It may be argued that increasing the number of patients studied might show a beneficial effect of selective decontamination even in intensive care units with an initially low incidence of pneumonia. Would this, however, compensate for the increasing risk of bacterial resistance and would it be cost effective?

Incidence of pneumonia in various studies classified according to whether they reported that selective decontamination of digestive tract had beneficial effect on incidence of pneumonia ($p < 0.05$)

Reference*	Accurate diagnosis	Incidence of pneumonia (%)	
		Controls	Active treatment group
Beneficial effect			
Korinek *et al*	Yes	39	21
Palomar *et al*	Yes	53	21
Godard *et al*	Yes	15	2
Winter *et al*	Yes	18	4
Pugin *et al*	No	59	11
Rodriguez-Roldàn *et al*	No	65	7
Blair *et al*	No	22	7
Aerdts *et al*	No	48	4
Unertl *et al*	No	45	5
Kerver *et al*	No	94	45
Sanchez-Garcia *et al*	No	43	24
Ulrich *et al*	No	46	13
Cerra *et al*	No	100	56
Mean (range)		50 (15-100)	17 (2-56)
No beneficial effect			
Brun-Buisson *et al*	Yes	9	5
Ferrer *et al*	Yes	24	23
Gastinne *et al*	Yes	19	15
Wiener *et al*‡	Yes	25	28
Hammond *et al*	No	19	15
Verhaegen 1	No	22	16
Verhaegen 2	No	22	11
Jacobs *et al*	No	9	0
Rocha *et al*†	No	13	15
Cockerill *et al*†	No	4	5
Mean (range)		17 (4-25)	13 (0-28)

*References quoted in meta-analysis.[1] (apart from Wiener *et al*‡).
†Incidences of pneumonia have been changed, as stated in text.

We were struck by the definite and potentially misleading conclusions in the article, indicating the number of patients who would have to be treated to prevent one case of pneumonia or death. The problems of increasing bacterial resistance,[11-13] the increasing incidence of infections due to Gram positive bacteria,[5,8,14,15] and the extra costs associated with the use of selective decontamination of the digestive tract[6,8,14,16] were not mentioned.

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Bronchoalveolar lavage valid for diagnosing pneumonia

EDITOR,—A recent meta-analysis of randomised controlled trials of selective decontamination of the digestive tract[1] included our randomised study[2] in its analysis of clinical benefit to patients treated in intensive care units. Details of respiratory tract infection are recorded with an indication of which trials used a protected catheter to distinguish pneumonia from colonisation of the upper respiratory tract.

Respiratory tract infection is one of two main outcome measures in this meta-analysis. Accurate diagnosis is crucial for correct identification of this outcome. The meta-analysis included prespecified subgroups in its evaluation, one of which was the type of diagnostic procedure used (quantitative microbiology on distal catheter specimens versus other sampling techniques). The subgroup results confirm a significant reduction in the relative odds of preventing chest infection in patients treated with selective decontamination. This may be midleading as our trial and perhaps others used fibreoptic bronchoscopy and bronchoalveolar lavage to diagnose pneumonia; this is an equally, or possibly more, valid technique for diagnosing pneumonia.[3] Those studies that used bronchoalveolar lavage should be included in the "valid diagnosis of pneumonia" group for an accurate assessment of the true incidence of infection and its reduction by selective decontamination.

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1 Selective Decontamination of the Digestive Tract Trialists' Collaborative Group. Meta-analysis of randomised controlled trials of selective decontamination of the digestive tract. *BMJ* 1993;307:325-32. (28 August.)
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Postpartum contraception

Unnecessary before three weeks

EDITOR,—R Brown is right to be cautious about the risk of early ovulation in women who do not breast feed adequately after delivery.[1] M D O'Brien and S Gilmour-White[2] would have been accurate, however, if they had said that contraception is unnecessary before three weeks (not four) post partum.[2] In a review of the literature up to 1989 I found that ovulation as early as day 30 post partum had been detected with urinary pregnanediol assays in only two women.[3] In addition, in two women Cronin had described possible ovulation, detected by basal body temperature measurements, on day 27 and day 28.[4] These may well have been fertile ovulations, since the temperatures remained raised for 13 and 14 days respectively and the first menses followed on days 41 and 43 respectively, suggesting adequate luteal phases. Despite studies of many hundreds of women, until now no apparently fertile ovulation has been detected earlier than day 27 or 28. This does not prove that it is impossible but suggests that it is rare.

I therefore recommended in 1989 that a contraceptive method should be used "from the start of the 4th week onwards" if any artificial feeds are given. This allows for a sperm survival time of up to seven days before the earliest likely ovulation. The Family Planning Association's leaflets on oral contraception are congruent with this, recommending that oral contraception is started on day 21 post partum. This allows sufficient time (seven days) for any early first ovulation to be suppressed and yet is long enough after delivery to avoid summation with the increased risk of thrombosis post partum.[3]