Eponymous terms are in daily use in medicine. This system of nomenclature which simply commemorates a person is inconvenient, poses difficulties to students and leads to frequent mistakes in scientific writings. Nevertheless it can be helpful in completely describing a multi-symptomatic medical condition or a complex surgical procedure which otherwise would not be neatly encapsulated in a reasonably convenient word or phrase. We used Finkelstein’s test as an example to demonstrate that the use of such nomenclature in clinical practice and scientific writing creates inaccuracies. We contacted 62 consultant orthopaedic surgeons and 47 specialist orthopaedic registrars of whom 53 consultant and 39 registrars responded. Three different descriptions of Finkelstein’s test were used as described in current literature. Only 10 (10.7%) surgeons recognised the correct method as described by Finkelstein and 83 (89.3%) were unable to do so. The results shows that a statistically significant proportion of surgeons uses the test (p < 0.0001) but fails to identify the correct method (p < 0.0001). We also found that Finkelstein’s test was inaccurately described in literature since Leao’s incorrect description in 1958 (quoting Eichhoff’s manoeuvre) and the mistake persisted for over 50 years before it was pointed out by Elliott (17). This error can produce a false-positive, and if relied upon, a wrong diagnosis can be reached. This can also lead to inappropriate treatment. We found out that such errors and difficulties in clinical practice and publications are due to the use of eponymous nomenclature and are not uncommonly encountered in other sections of medicine as well. The problem has
mostly been underestimated and overlooked but nevertheless concerns have been raised now and again. We used this eponym test (Finkelstein’s test) to find out how many of orthopaedic surgeons have come across the incorrect description.

MATERIALS AND METHODS

We used the Finkelstein test as an example to devise a form with three pictures of the above test with three descriptions (fig 1, 2 and 3). See also the Questionnaire used for data collection (Appendix A).

We also included three further questions:

– Do you use Finkelstein’s test?
– Do you find eponyms confusing?
– Do you think we should discard use of eponyms?

Sixty-two consultant orthopaedic surgeons and 47 specialist registrars were contacted. Fifty-three consultants and 39 registrars responded.

We also asked them if they had a specialist interest and training in hand surgery.

RESULTS

The overall response rate was high. Ninety-three out of 111 surgeons contacted responded, with an overall response rate of 83.7%.

The combined responses were as follows (table I). Fifteen out of 93 surgeons had special interest in hand surgery (16.2%). Eighty-four (90.4%) surgeons used the above test regularly. Forty-six found the eponyms confusing and 47 not confusing. Thirty-five (37.6%) thought eponyms should be discarded and 58 (62.4%) thought their use should continue. Only 10 (10.7%) surgeons recognised the correct method as described by Finklestein and 83 (89.3%) were unable to do so.

The responses are also shown in tables II and III under separate specialist registrar and consultant categories.
The statistical differences are shown in table IV. A large majority of surgeons had little or no experience in hand surgery (p < 0.0003). Both consultants (p = 0.7) and registrars (p = 1) did not find eponyms confusing. There was also consensus among consultants (p = 0.08) and registrars (p = 0.183) not to discontinue use of the test. The results show that a statistically significant proportion of surgeons uses the test (p < 0.0001) but fails to identify the correct method (p < 0.0001) (table IV).

**DISCUSSION**

Finkelstein described the most pathognomonic sign of de Quervain’s disease in 1930 by eliciting pain on traction of the thumb, which was worsened with ulnar deviation of the hand (12-14, 20). Errors in correctly describing the Finkelstein test can be traced to Leao (1958) who quoted Eichhoff’s manoeuvre as Finkelstein’s test (16, 20, 39). There have been incorrect descriptions of the test since then in the literature by many other authors (9, 19, 25, 28, 41, 42, 48, 57, 61). Elliott pointed out the mistake in 1992 (17) and explained the difference between Finkelstein’s test and its commonly used variant that will produce similar pain by tendon stretching in a normal wrist.

We used Finkelstein’s test to know how many orthopaedic surgeons can identify the real description. Surprisingly 90.4% (p < 0.0001) of orthopaedic surgeons were using the test but only 10.7% (p < 0.0001) could correctly identify the correct method and 89.3% were unable to do so. This draws attention to the fact that a large number have been lured by the inaccurate descriptions, as was well expected, because of the fact that the test has been incorrectly described in the literature for over 50 years. This also shows the implication of incorrect description in the literature.

We believe that this descriptive error in the literature is due to the use of eponymous terminology. The use of this nomenclature may be helpful in some clinical settings where a multi-symptomatic condition would not be described completely otherwise, but in general practice its use will produce
variation in clinical practice and scientific writings. This system of nomenclature has an intrinsic weakness that the original description may not always be reproduced and can carry different meanings for each subsequent reader. Eponymous term name rather than describe and thus in themselves are meaningless, serving to mystify rather than clarify. The ways it could cause errors are many but the common ones have been recognised and the effects are shown to be copious.

According to the original description of John Rhea Barton in 1838 (4), the term “Barton’s fracture” should be limited to those injuries which involve the dorsal or posterior margin of the distal radius. Thompson and Grant (55) reviewed the literature in 1976 and found that the British and European literature considers the lesion an anterior marginal fracture, while the American literature regards the injury as posterior marginal fracture. They showed that the confusion arose when Thomas (54) described anterior marginal fractures as type II in his classification of Smith’s fracture. Subsequently it was called Barton’s fracture by many authors, though Thomas’s original article has no mention of Barton’s name or reference. Ellis (18) incorrectly described anterior marginal fractures of the distal radius as Barton’s fracture, quoting Hamilton’s textbook “A Practical Treatise on Fractures and Dislocations” published in 1860 (22). In the current world literature both anterior and posterior marginal injuries are still referred to as Barton’s fracture, thus necessitating the use of descriptive and anatomic terminologies such as anterior and posterior marginal fractures to aid understanding, allow comparison and help our clinical practice.

Another historical practice in lax usage of anatomic terms and indiscriminate application of eponyms is use of the term “Jones’ fracture” (1, 3, 24, 46, 53) to refer to all the fractures in the proximal region of the fifth metatarsal; this has also created much confusion. It is quite likely that the delayed or non-union associated with non-operative management seen in most of these series is because a number of fractures classified as Jones’ fracture were actually diaphyseal stress fractures (49). At least three to possibly six fracture types have been described in the literature around the proximal fifth metatarsal (38, 56). The two distinct proximal fifth metatarsal diaphysis fracture types are the acute fracture commonly referred to as Jones’ fracture and the stress fracture. Some authors have confused the avulsion fracture of the tuberosity with Jones’ fracture of the proximal diaphysis (8, 43). It is actually the acute fracture and the stress fracture of the proximal diaphysis of the fifth metatarsal that need accurate differentiation. This confusion was addressed by Lehman (40) by devising a classification system that included proper description of three distinct fracture patterns around the region, that have significant treatment and prognostic implication. Another easier and more logical method of classification involves the mechanism of injury (30). The inadvertent use of the term Jones’ fracture should thus be avoided.

The value of eponyms is in their correct understanding of the meaning, without which their use can be confusing and even dangerous. This is particularly true in classifications of ankle fractures. The history of classification of ankle fractures can be traced back to the early 19th century. Dupuytren and his students identified various categories of ankle fractures which bear their names (6, 15, 23, 47). This was followed by various ankle fracture classification systems, including the Bosworth, Cotton, Lauge-Hansen, Le Fort, Pott, and Weber systems. The Lauge-Hansen (31-35) and the Weber (10, 45, 60) systems are the common ones in use nowadays. Lauge-Hansen uses the mechanism of injury to classify ankle fractures, which is confusing as movements like supination and pronation in the foot are not easy to understand, even by experienced orthopaedic surgeons. The multiplicity of eponyms and other complex designations for ankle fractures creates confusion in general usage, and a universal classification system that would predict the treatment and prognosis is needed.

Once quoted in the literature, eponymic terms may also be referred to incorrectly. Kapandji was right that Lauenstein described resection of the medial meniscus but he quoted the wrong paper because Lauenstein had two papers to his name (27, 36, 37). He was also incorrect when stating that his father was the first to describe partial or complete
resection of the distal ulna; neither was it Lauenstein or Darrach (11), it was Von Lesser (58) whose paper was published in 1887 and was quoted by Lauenstein in that same year (36).

In a recent BOA meeting (52) Darrach was again misquoted because his original description in 1912 mentioned preservation of the articular surface of the distal ulna, but in the literature he is widely quoted as the father of distal ulnar excision. The original description was that of Von Lesser in 1887, who was subsequently quoted by Lauenstein in the same year (36, 58). The misunderstanding thus created has persisted for 115 years.

For many years, we relied on eponyms for the classification of fractures. Though eponyms have occasioned impassioned controversy now and again, the widespread practice of reckless coining of new eponymous terms has carried on without consideration either to the possible alternatives or the likely consequences. Several studies have shown that many classification systems in common use do not have consistency among or within observers. Brumback and Jones (7) and Horn and Rettig (26) in different studies found only moderate to poor inter-observer reliability for the Gustilo and Anderson classification for open fractures. There was only 22% inter-observer agreement on the various stages in Garden’s classification of fractures of the neck of the femur on random review of 100 radiographs of femoral neck fractures in one study (21). Garden’s classification has however good intra-observer reproducibility (45). The AO classification also has poor intra- and inter-observer reliability and is of limited predictive value for treatment outcome for the intracapsular fractures of the proximal femur (5, 44). Hence many authors have agreed on using a simplified system with three basic groups of undisplaced, displaced and basal. Another similar situation abounds eponymous studded classifications of distal radius fractures. The study of Kishore et al (29) shows that the use of eponymous nomenclature related to the description of common wrist injuries produces significant inter-observer variation. A significant number of orthopaedic and emergency medicine trainees (88%) in this study were unable to identify the correct fracture in three United Kingdom hospitals and most of the trainees felt the need for an alternative descriptive system that will improve accuracy in communication, that is relevant to the treatment and prognosis, and will be helpful in research. Analysis of the inter-observer reliability and intra-observer reproducibility has found moderate agreement between the observers for the Mayo classification and fair agreement for the Frykman, Melone and AO classification (2). Thus given the low degree of agreement for each of these classification systems, their use as a sole mean of determining the treatment or comparing the results is not warranted.

Smith (51) in an editorial stressed the need for an alternative classification system for fractures description. He stated that the new system should produce less inter-observer variation, be comprehensive, easily stored, usable to generate sound electronic database, and prognostic to patient outcome and cost implication. This new structured system should be used for clinical practice and research, and by journals in their protocol for scientific writings. He quoted yet another study of distal humeral fracture classification systems addressing the same issue of observer reliability and reproducibility of the classification systems (59). He drew interesting conclusions from the study as to what exactly should be expected from the classification system. The different classifications used in this study are good examples of the systems that work in different ways. Risenborough and Radin, and Jupiter and Mehne classification represent the basic structure, which is single-glance, best-fit type. It helps us to make the snapshot recognition of fracture pattern in general use but it is not free from flaws as there is tendency to make the fracture fit the classification with a more common brain stem response. Also there is usually no consistency between the numerous classifications developed for each bony area. So while these eponymous classifications help pay tribute to their ingenious inventors, the intrinsic weaknesses in their system make their use inefficient and even dangerous. On the other hand the comprehensive AO system of classification which appears difficult to use, has the advantage that it is consistent in types and groups. It reliably describes the key parameters on the initial radiographs.
required for planning of treatment in such fractures. The suboptimal circumstances in which initial radiographs are often taken in a trauma setting are well known, and for further classification more detailed investigations are required. For complete classification, a further film under anaesthesia and under traction may be required before surgery. In some instances complex injuries may well require further scanning and operative exposure. Some surgeons in this study (59) accepted the initial films for analysis for definitive treatment of complex fractures.

The Riseborough and Radin system (50) was not found comprehensive as half of the fractures in their study (59) were not classifiable according to this system. The Jupiter and Mehne and the full AO system had only fair agreement between observers, while at lower levels, with respect to type and group only, the AO system produced moderate or substantial agreement. This finding is consistent with other similar studies of comprehensive systems in which accuracy was reduced at attempts to classify down to finer detail. Though the aim of this study (59) was only to see the intra- and interobserver agreement for the classifications of the distal humeral fractures it is easily seen that it would recommend the AO classification.

Hence in the modern era of evidence based medicine where we mostly rely on randomised control trials and consensus guidelines, this anecdotal scheme is a cause of inconvenience and causes difficulties to students, in clinical practice and scientific writing. We therefore propose that credit should be given when and where due, but methods should be described with structured definitions which should be universally acceptable and user friendly. This will prevent the chances of mistakes in clinical practice and errors in scientific writings.

REFERENCES

13. de Quervain F. [Scientific raisins from 125 years SMW Dr Fritz de Quervain in la Chaux-de-Fonds 1895]. Schweiz Med Wochenschr 1995 ; 125 : 561-565.
30. Landroff KB. Fifth metatarsal fractures are not all the same: proximal diaphyseal fractures are prone to delayed healing. Foot 1998; 8: 38-39.
Appendix A. — Eponyms: Errors in clinical practice and scientific writings (Questionnaire)

In 1895, de Quervain described pain along the radial styloid region related to the tendons coursing in the first dorsal compartment of the wrist, involving tenosynovitis of the abductor pollicis longus and extensor pollicis brevis tendons. One of the most significant papers in the English literature was by Finkelstein (1930). In this paper he described what has now become known as Finkelstein’s test.

Do you use Finkelstein’s test?

☐ Yes ☐ No

Do you find eponyms confusing?

☐ Yes ☐ No

Do you think we should discard use of eponyms?

☐ Yes ☐ No

We have given on next page three descriptions of the above test; please indicate the one you use in your clinical practice. If you do not use the above test, then describe below your clinical practice briefly.

Please fill the form before referring to any text.

Please indicate your grade (tick the appropriate box)

Specialist Registrar ☐

Consultant ☐

Specialist interest in hand surgery: ☐

Amount of experience in hand surgery:

Less than 1 year ☐

1 to 2 years ☐

2 to 5 years ☐

More than 5 years ☐