

Retraction of a paper

In March 1994, a manuscript was submitted to us entitled 'Biomechanical, histological and neuroproprioceptive properties of cryopreserved irradiated ACL allografts'. The authors were M. J. Goertzen, H. Clahsen, K. F. Bürrig and K.-P. Schulitz of the Heinrich Heine University Hospital, Düsseldorf. The paper was accompanied by a letter of transmittal of copyright, apparently signed by each of the authors, stating that the article was original and had not been previously published. Our reviewers had only minor criticisms, although one felt that it was probably too specialist for our Journal. After revision, the paper was finally accepted in July 1994, and after heavy editing it was published in March 1995¹ as 'Sterilisation of canine anterior cruciate allografts by gamma irradiation in argon' (77-B:205-212).

Soon after publication, we were informed that Figure 9 on page 210 of that article, described as an 'Electron micrograph of a free sensory nerve ending in a non-irradiated graft 12 months after implantation', had been published as Figure 3 with a very different caption in a paper by Halata and Haus² in 1989 (*Anatomy and Embryology* 179:415-421). We were informed by the corresponding author of the JBJS article, Dr Meinolf Goertzen, that he had provided the figure in error and were asked to accept a corrected illustration. He sent us a new figure which was published in good faith as an erratum in our November 1995 issue (77-B:985).

In December 1995 we were informed that the figure published in the erratum showed a striking resemblance to parts of two electron micrographs which had previously been published. The main part of the figure in the erratum was shown to be largely identical with a figure published in a book by Dr Goertzen³ in 1992 (*Die allogene kreuzbandtransplantation als intraartikulärer bandersatz*, Unas Verlag, Aachen, ISBN 3-925994-22-X, Figure 19), but the latter did not contain the elements marked by arrows in the erratum. These elements resembled in many details some images of sensory nerve endings published by Haus, Halata and Refior in 1992⁴ (*Zeitschrift für Orthopädie*

130:484-494, Figure 18). Further enquiries led to a reply from Dr Goertzen that he had no explanation for the error.

It also became apparent that there had been multiple publication without due acknowledgement. A paper by the same authors⁵ with similar data on irradiated canine allografts had appeared in the October 1994 issue of *Knee Surgery, Sports Traumatology and Arthroscopy* (2:150-157). In addition to findings on irradiated allografts, both papers also reported data obtained on non-irradiated allografts. Some of these findings had previously been published by Goertzen and various collaborators both in English^{6,7} (*Arch Orthop Trauma Surg* 111:126-129 (1992) and 111:273-279 (1992)) and in German^{8,9} (*Zeitschrift für Orthopädie* 131:179-186 (1993) and 131:420-424 (1993)). None of these publications had been cited in the original submission to the *Journal of Bone and Joint Surgery*, and Figures 1, 2, 3a, 3b, 3c, 4, 5, 7a, 7b, 8 and 10 of the JBJS article had all been previously published, one of them five times.

The co-authors, Professors Clahsen, Bürrig and Schulitz have been asked to explain their roles in the submission of the paper. Dr Goertzen has responded on behalf of Professor Schulitz, stating that the letter of transmittal had been signed by Professor Schulitz, and on behalf of Professor Clahsen, that he had been authorised to sign for him. Professor Bürrig has stated that his name had been signed on the letter of transmittal without his consent or knowledge, that the manuscript had been written without his knowledge, that he did not authorise the use of the illustrations in the manuscript and that he had had no interaction with Dr Goertzen since he had left the Heinrich Heine University, Düsseldorf in 1991 to accept his current position in Hildesheim.

Dr Goertzen and Professor Schulitz have denied any impropriety and the Journal has no evidence that Professors Schulitz, Clahsen and Bürrig were involved in the preparation of the original paper.

In these circumstances, the article published by this Journal and the erratum are formally retracted from the scientific literature. The editors of the journals from which material had been resubmitted to our journal have been informed.

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<p style="text-align: center;">TOPIC FOR DEBATE</p>
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Taxonomy and treatment – a classification of fracture classifications

The reliability of classification of fractures has recently been the subject of discussion,¹⁻³ but reliability in itself does not measure the clinical usefulness of such systems. For example, fractures of the femoral shaft can be defined as type I in the right leg and type II in the left with complete reliability, but the distinction is trivial and has no clinical power. Müller et al⁴ have stated that “a classification is useful only if it considers the severity of the bone lesion and serves as a basis for treatment and for the evaluation of the results”.

We have devised a grading system for the classification of fractures based on this definition. This ‘classification of classifications’ assesses the degree to which the requirements of treatment can be based on the classification. In our assessment a grade-A system (Fig. 1) allows one-to-one pairing of its categories with particular regimes of treatment. The treatment of an injury is then a function of its

assignment within the classification.

In our grade-B system, the criteria which define the classification are crucial factors in determining treatment, but they differ from the grade-A system in that the divisions are inappropriate and disrupt the direct relationship between classification and treatment. In a grade B-1 system (Fig. 2) the subdivisions are incomplete; two or more patterns of fracture, each having its own requirements for treatment, are inappropriately placed in the same category.

In a grade B-2 system (Fig. 3), there are excessive subdivisions, so that two or more categories share the same treatment. By contrast, our grade-C fracture system (Fig. 4) shows no relationship between the treatment and the category within the scheme. Many of these classifications serve only as shorthand terms for a topographical description.

We applied our rating system to 66 systems of classification collected from two textbooks on fractures.^{5,6} When assessed as to the requirements for treatment 13 were grade A, 21 grade B (four B-1, 17 B-2), and 32 were grade C. Nearly half of the classifications had little relevance to a therapeutic plan. This was not necessarily a result of poor design; some had simply failed to evolve with changes in clinical practice. Advances in imaging had made some classifications obsolete; injuries grouped together on the basis of plain radiography may require CT or MRI to establish their full classification and subsequent treatment.

We recognise the problems created when a system of classification tries to serve simultaneously as both a clinical and a research tool. A system succinct enough for routine clinical use may be inadequate for research into outcomes.

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