Case history: more than a beauty case!

A case for case histories

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Case histories form a substantial element of the medical literature. However, due to their inherent anecdotal and observational nature, the description of an individual patient report is hardly considered to contribute to evidence-based medicine. For these reasons, some journals even exclude case histories from publication. Is this a good policy? In my opinion, on the contrary! Case histories can be the true background for systematic or hypothesis-based research. The accurate observation and description of a single patient case may form the basis for further exploration of the observed phenomenon, thus opening new fields of interest. The role of case histories is therefore to expand our knowledge based on incidental experiences. The first clues about tobacco smoking and lung cancer came from surgical patient series in the 1920s and 1930s; formal case-control and cohort studies came only decades later.¹ Needless to say, case histories should provide novel information such as progress in diagnostic techniques or advances in treatment modalities. Consequently, interesting case histories should definitely be published with the aim of spreading the information among scientists who may have had similar experiences. When consistent patterns are recognised in multiple cases, these patterns may result in useful integration of information and in the definition of a new hypothesis, a new disease, and applications of new techniques and treatments. For instance, recognition of side effects of drugs is usually based on the identification of multiple identical observations by individual physicians. Unexpected adverse effects are by definition due to unknown mechanisms, and many established adverse effects still escape elucidation after years; further accumulation of anecdotal reports can provide sufficient evidence.² A

ten-year score of 22 drugs that were withdrawn from the market showed that 18 drugs were prompted by case reports and only four by a controlled study; for at least 13 drugs the case reports proved sufficient reason for withdrawal.³ As a consequence, published case reports remain a valid and efficient source for signal generation and are of great value for drug safety.⁴ Eventually, the summation of sufficient identical cases might result in designing new multicentre clinical trials with potential implication for changing existing guidelines or even the creation of new guidelines. Along those lines the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) statement has been launched which is a network of methodologists, researchers and journal editors to develop recommendations for reporting observational research.⁵ Randomised trials cannot answer all the important questions about a given intervention. Observational studies are more suitable for detecting rare or late adverse effects of treatments, and are more likely to provide an indication of what is achieved in daily medical practice. The aims and use of the STROBE statement are to create a checklist of items that should be addressed in articles reporting on the three main study designs of analytical epidemiology: cohort, case-control, and cross-sectional studies. The STROBE checklist should be used in conjunction with the explanatory article, which is available freely on the websites of *PLoS Medicine* (www.plosmedicine.org), *Annals of Internal Medicine* (www.annals.org), and *Epidemiology* (www.epidem.com).

Apart from the implications in clinical practice, case histories can also be used for didactic and educational purposes, both in a preclinical and a clinical setting.⁶ This is based on the old Latin proverb: *ex uno, discite omnes* (from one person learn all persons or one example tells it all). In preclinical medical education case histories can be used in a number of different ways: 1) they can be used to increase the retention and reveal the relevance to medical practice of newly acquired scientific principles and facts; simple didactic cases are best for this purpose, 2) they can be used to introduce students to diagnostic thought. Here problem-based learning where students learn to draw on the medical

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literature is a powerful approach, and 3) they can be used to help students develop an integrative scientific conception of the human organism by pondering the development and aetiology of a disease.⁷ In this respect, clinicopathological conferences from the *New England Journal of Medicine* are used to introduce first-year medical and graduate students to scientific reasoning at the level of the whole organism and to help them mobilise and integrate the knowledge obtained in their previous studies. At the clinical level, over recent years many clinical teaching courses, symposia, and major congresses have 'illustration by case examples' or 'difficult patient cases' as a fixed feature on their programme schedules. These sessions are usually more than well-attended underscoring 1) that case presentations are very appealing to treating physicians and 2) that consensus guidelines only 'work' when they are applicable to the individual patient.

In the July/August issue of our Journal we present seven interesting case histories.⁸⁻¹⁴ The cases were selected based on originality and potential interest to the reader. Topics of the case histories are electrophysiology and congenital heart disease. We hope that these patient cases will be inspiring for both scientific and educational purposes. History will teach us the true value and impact of these cases. To summarise, while the anecdotal case cannot be used to derive general principles, neither do the rules derived from averaged group observations have meaning at an individual level.¹⁵ It can therefore be argued that both types of research are necessary. Similarly, in order to progress, scientific endeavour requires occasional changes in direction. This requires investigators to take note of the unexpected event and make new inferences based upon it. In this way, new theories can then be derived. All methodologies have limitations and in order to overcome these, several methods, including the case report method, should be employed. To cite Vandenbroucke: *there is no other way but a series of cases to bring a potentially new disease to the attention of the medical public.*¹⁶ ■

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N.B. As of June 19, 2008, The BMJ Group has launched a creative online service – BMJ Case Reports. The BMJ group has become aware that case reports are actually a great educational and scientific resource for all healthcare workers and researchers with the aim to share experiences.

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