

FEATURES SECTION

How to do ... a case report

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Introduction

Case reports are an integral part of most orthodontic journals. Many clinicians with interesting and well-treated cases may, however, be deterred from submitting their results for publication simply because they are unsure of the records or layout required. The aim of this short article is to provide some guidelines to help aspiring authors formulate a case report that is comprehensive and suitable for publication.

We have chosen to illustrate our article with clinical photographs. Further high quality illustrations, such as tracings or photographs of models that highlight particular aspects of clinical treatment, will always make a significant impact in the presentation of the case. A sample case report is also cited within this paper to point out its many good points and occasional bad points. The report used is the one printed in this journal. Its author was the recipient of both the Intercollegiate M.Orth. gold medal and the Edinburgh M.Orth. gold medal. In addition to the superb clinical treatment provided, the case report needed almost no editing prior to acceptance.

Narrative

The narrative should, in effect, tell the story of the case from initial referral to eventual completion of the clinical treatment. The reasons for the referral and the patient's concerns should always be documented to allow assessment of whether these were addressed during treatment.

This is usually followed by an extra-oral assessment including salient features of the skeletal pattern, maxillary-mandibular planes angle, and lower facial height. The soft tissues pattern is described in terms of lip morphology and competence, and their relationship to the upper incisors. Facial profile may then be documented noting the nasolabial angle and the position of the lips relative to Ricketts' E-plane.

The intra-oral examination is now described detailing inter- and intra-arch relationships of the teeth. As well as

the incisor and molar relationships it is helpful to discuss the canine relationship, which is considered by some the key to meaningful assessment of malocclusion. The degree of crowding may then be discussed with reference to any specific problems and if a formal space analysis has been undertaken a summary can be included here. High quality photographs should, wherever possible, be used to illustrate the features highlighted in the written description (Figure 1).

The case report followed the conventions set out above. However, in both cases described the start photographs were less than ideal. In the first case the start intra-oral shots involved use of inappropriate retractors, which were not being used efficiently and the angle from which all five photographs are taken are incorrect.¹ In the second case, the extra-oral photographs are taken at too great a magnification and the flash illumination is poor. In the intra-oral shots the magnification changes between the front and lateral shot, and the mirror is not used well. In both cases, the poor start photos are in stark contrast to the superb extra- and intra-oral shots taken at the end of treatment. Interestingly, the author was totally aware of the shortcomings of the start photographs and had mentioned them in his covering letter hoping that, whilst not perfect, they would be adequate for publication.

This perennial problem of first year postgraduates taking poor photographs on all their prospective M.Orth. cases is totally preventable. Third year postgraduates could be asked to collect all start records for the incoming first years, as they wind down in the 3–4 months post-M.Orth. Hopefully, at this stage, they will have gained the expertise to collect high standard records, thus relieving pressure on the incoming students to immediately develop all the required skills.

Aetiology

An attempt should be made to identify the aetiology of the features of each and every aspect of the malocclusion. Only by listing these can a complete understanding of the case be demonstrated.



Fig. 1 Pre and extra oral and intra oral photos.

Treatment objectives

A list of the broad treatment objectives can now be included which helps focus on the desired outcome for each aspect of the malocclusion. The case report listed six and five aims, respectively, and these issues were all addressed in the subsequent treatment plans.

Treatment plan

The proposed treatment plan should then be discussed ensuring that each item in the problem list is addressed at the appropriate stage in treatment.

Treatment progress

A description of the archwire sequence and techniques used helps to guide the reader through the clinical treat-

ment. The use of in-treatment clinical photographs at various stages helps to illustrate progress (Figure 2). High quality photographs will greatly enhance any case report. These were sent for the first of the two prize-winning cases in the case report, and it was particularly useful to have both extra- and intra-oral photographs immediately before the surgery. Ideally, a full series of extra-oral photos should have been provided. In the second case, photographs after the functional phase were provided. However, some photographs with fixed appliances on would have enhanced the report.

Radiographs

Radiographs are useful both pre-treatment and towards the end of treatment as these can shed light on the treatment planning decisions at both stages (Figure 3). Post-



Fig. 2 Mid-treatment intraoral photographs to show treatment 'milestones'.

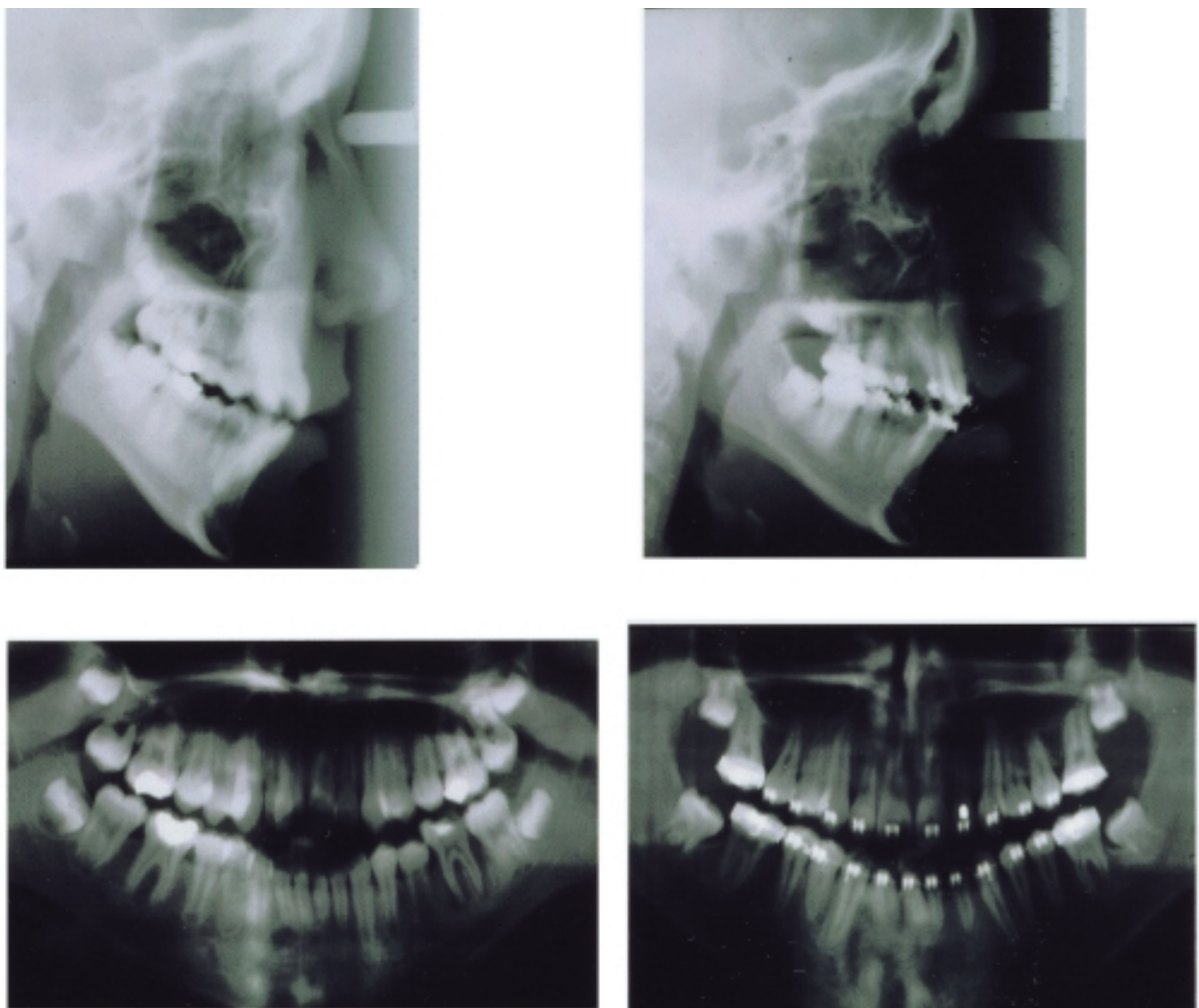


Fig. 3 Radiographs pre-treatment and near the end of treatment.

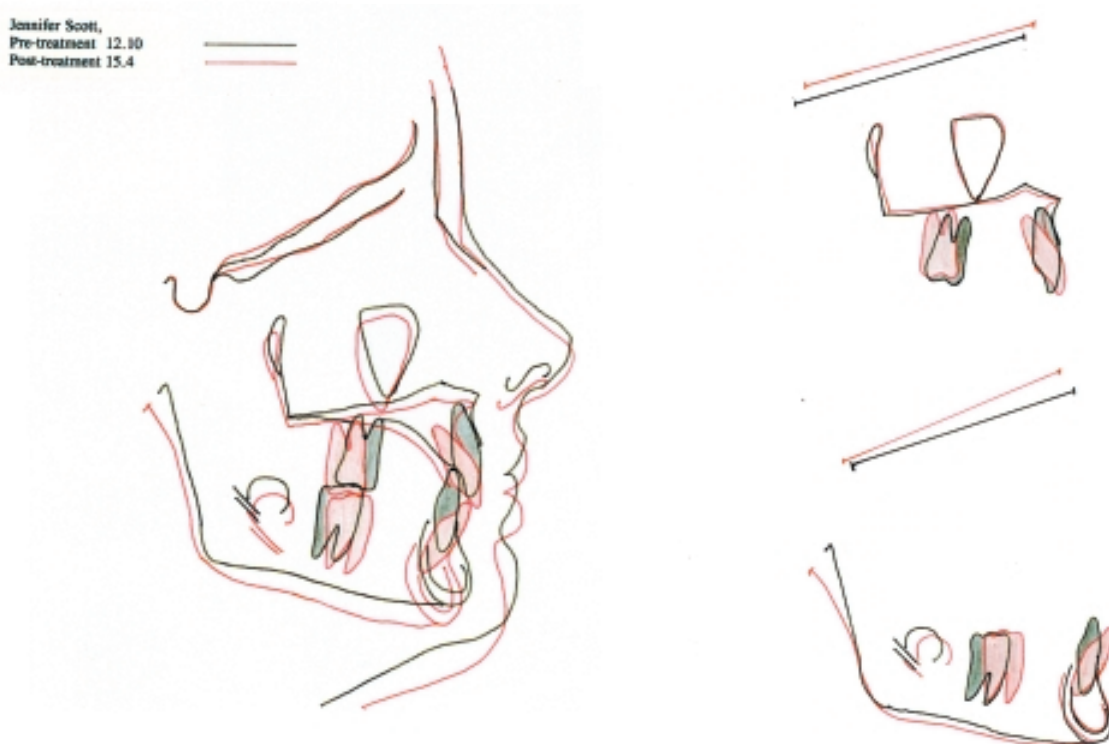


Fig. 4 Tracings and superimpositions to show effects of growth and treatment.

treatment radiographs for individual patients are difficult to justify and should be discouraged unless specifically indicated.

The surgical case in the case report included immediate pre-treatment radiographs and the functional case included a post-functional lateral cephalogram. This allows accurate assessment of the changes achieved during the first phase of treatment and also allows appropriate planning of future mechanics.

An assessment of the relevant intra-oral radiographs followed by a discussion of the OPT and lateral cephalogram with its associated tracing is helpful. As well as the numerical values on the tracing a couple of brief sentences should be written giving the salient points of the cephalometric assessment.

Retention regime

Photographs of retainers used may be helpful and the rationale for choosing specific retention regimes is of interest.

Case assessment

Discussion of the result achieved and likely prognosis for the case is perhaps the most important part of the

whole case report. It demonstrates understanding of all aspects of the case, as well as an ability to provide treatment to a high standard; a high quality case report demonstrates understanding of the subtleties of diagnosis and treatment planning.

Photographs

Whilst it is, of course, impossible to compensate for a poor diagnosis and treatment plan with an exemplary standard of records, it is entirely possible to make a superb case un-publishable with mediocre records. With the increasing popularity of digital photography² the standard of photographs seen at meetings and in the literature should be improving. It is now possible to take an unlimited number of photographs at no additional cost, on every patient, until the desired view is obtained. Unsatisfactory photographs can be immediately identified as such and are merely discarded as an effort is made to obtain the perfect shot. Certainly, photographs taken by postgraduates in training should be at every archwire change and other key stages in treatment to ensure that, if the case works out well, it will be possible to present either verbally or as a case report.

Radiographs and cephalometric tracings

Lateral cephalometric radiographs and their tracings should be included to illustrate the situation at the start and near finish of treatment. Superimpositions should be included to identify the skeletal and dental changes achieved. It is helpful to also include separate mandibular and maxillary superimpositions with the tracings superimposed on Bjork's stable structures, which allows tooth movement relative to respective jaws to be identified, as well as movement of the jaws relative to the SN plane (Figure 4).

Summary

To get a case report published, the most important records are high quality clinical photographs illustrating the case throughout treatment. These must be accompanied by a clear and concise write-up demonstrating a complete understanding of all aspects of the treatment provided.

References

1. Sandler PJ, Murray AM. Clinical photography in orthodontics. *J Clin Orth* 1997; **31**: 729–739.
2. Sandler PJ, Murray AM. Digital photography in orthodontics. *J Orth* 2001; **28**(3): 197–202.