

# Dental photography in record keeping and litigation

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## IN BRIEF

- Stresses a clinical photograph can form an important and accurate part of the patient record.
- Informs that defence of a claim by a patient can be dependent on contemporaneous photographic evidence.
- Highlights that having the appropriate equipment and training in dental photography is important for all the dental team.

Dental photography is essential in record keeping and it is important for all members of the dental team to be appropriately trained and for each practice to have the appropriate equipment. This article provides an overview of the applications of dental photography and equipment, and highlights issues of consent and duty of care.

## INTRODUCTION

Photography is a hobby enjoyed by millions. For many years it has played a vital part in our lifestyle both at work and at play. It is found in almost every aspect of day-to-day living, and is an important source of information, education and revenue.

Photography is one of the most versatile and easiest of media with which to work. It has rapidly become one of the tools that should be used routinely in dentistry today, made possible by the recent improvement in technology and affordability. With appropriate training and practice every member of the dental team should be capable of taking high quality clinical photographs. A number of these training programmes are currently available such as 'Dental photography', one of the BDA Essentials courses. Dental photographic images can form an important part of a patient's clinical record and may provide important evidence in reducing the potential for patient litigation. A recent survey of concluded bridgework cases by Dental Protection Ltd found poor record keeping and lack of consent are the most likely reasons to result in a patient claim.<sup>1</sup>

## APPLICATIONS

Photography has been and continues to be an integral component of both clinical practice and dental education and has a large number of potential applications (Table 1), many of which are associated with the potential for litigation.

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**Table 1 Applications of photography related to litigation and record keeping**

### Applications

The initial patient record  
As evidence of treatment provided  
Diagnostic support  
Legal records and reports  
Patient communication and education  
Insurance claims related to treatment  
Insurance claims related to the practice/clinic  
Practice publicity  
Forensic information  
Audit and research

## The initial patient record

With the advent of computerised patient records and sophisticated charting grids it might be assumed that the role of clinical photography has been diminished, but nothing could be further from the truth. Paper-based dental charting has served the profession well for generations and computerised charting systems have made use of sophisticated graphics that provide the clinician with much greater versatility, clarity and accuracy when recording the oral health status. However, it is both time consuming and open to interpretation when recording the existing pathology of both the hard and soft tissues. Clinical photography can overcome these problems by providing a record that is both accurate and detailed and can replace the necessity of a text description, sketch or diagram, which may fail to record vital information (Fig. 1). A photographic record of the oral health status of hard tissues could include the extent of caries, leaking restorations (Fig. 2) with marginal deficiencies, enamel cracks (Fig. 3), interproximal spaces (food packing potential) tooth surface loss, hypoplasia and hyperplasia, staining, demineralisation, abrasion, attrition erosion and abfraction, all of which are difficult to describe without



**Fig. 1 Oral mucosal lesion. Ulcer on left side of tongue. Approximately 3 mm diameter with red border. Has been present for three days. Traumatic in origin; produced in response to biting**



**Fig. 2 Leaking restoration**



**Fig. 3 Multiple conditions**

a photographic record other than stating that they are either present or absent. A photographic record can also provide valuable evidence to support the justification for a proposed treatment plan which could be invaluable should the patient transfer to another practitioner at a later date and be advised that additional or alternative treatment should have been undertaken.

**Treatment provision**

Photographs provide an important adjunct to the ongoing treatment record. They serve as an ideal, accurate and informative way to document the progress of a patient's treatment at each and every visit by recording the initial clinical condition (Fig. 4) including restorative care provided, healing after surgery and changes to soft tissue pathology. They can also be used to highlight anticipated future problems. Orthodontists take photographs routinely as an invaluable aid in diagnosis, treatment planning, documenting and recording facial and soft tissue changes and recording the stages of treatment provision. All photographs form part of the patient record and should be capable of being accessed as an integral part of it. On completion of active orthodontic treatment if there have been any detrimental effects on the teeth such as areas of demineralisation, or damage to the tooth surface that has occurred or worsened as a result of treatment, it is useful to record these photographically and discuss these with the patient or their carers. This also applies to changes that might take place during the retention phase. Photographs can also prove to be helpful should a dispute arise at a later date, which could lead to litigation, an occurrence that appears to be happening with increasing frequency, particularly with the advent of accelerated orthodontic treatments such as 'fast braces' or '6 month smiles'.

Patients may return to their dental professional, perhaps after consultation with their family or friends, insisting that they looked better before their dental treatment. This is most common where cosmetic or aesthetic improvements have been attempted. The existence of pre- and post-operative photographs as evidence may be the only defence against these claims or opinions (Figs 5 and 6). Photographs will demonstrate the original condition, for example, the presence of large restorations, the periodontal or gingival condition etc, long after the patient has forgotten and may well protect the healthcare professional against litigation by the patient.

**Diagnostic support**

It is inevitable that from time to time practitioners will encounter oral pathology



**Fig. 4** Baseline photographic clinical record

with which they won't be familiar and will therefore be compelled to seek specialist diagnostic support. This is particularly relevant where a lesion may be suspected as being potentially malignant. Sometimes this support may be available from a colleague within the practice but usually advice has to be sought from further afield. The ability to provide a photographic record and send it (possibly electronically) to obtain a specialist opinion is invaluable in achieving a speedy and informed opinion, which could reduce patient anxiety and if necessary initiate an earlier intervention.

**Legal records and reports**

The potential for litigation continues to be a significant problem in routine clinical practice. The capability of successfully defending any claim is dependent on the possession of accurate, comprehensive and contemporaneous clinical records. The defence societies will confirm that many cases have been lost due to the lack of adequate records. Appropriate photographs providing vital supporting documentation will go a long way in dismissing an allegation or claim by a patient and just the knowledge by the patient that they have been taken may be sufficient to prevent the initiation of lengthy and invariably stressful legal action.

**Patient communication and education**

The recent General Dental Council document *Standards for the dental team*,<sup>2</sup> which came into effect in September 2013, places great emphasis on the importance of effective



**Fig. 5** Before treatment, failing crowns and restorations in the upper arch



**Fig. 6** After replacement crowns – upper arch



**Fig. 7** Trauma to anterior teeth

I, ..... (full name)  
do hereby give  
..... (the photographer)  
and parties designated by the photographer, including clients, licensees, agencies and periodicals, the right to use my name and photographs and reproduction in any medium for purposes of education, or teaching, in scientific publications, websites, advertising, trade or exhibitions.  
I understand that it may be possible to identify me from the pictures, and that I will not receive any remuneration for use as detailed above.  
I have read this release and fully understand its contents.  
I confirm that I am over 18 years of age.

Signed: .....  
Print name: .....  
Date: ...../...../.....  
Address: .....  
.....  
Tel. no. and email address: .....

**Fig. 8 Photography patient consent form**

patient communication. The importance of verbal communication is paramount and it is therefore worth remembering that 'a picture can tell a thousand words'. This is particularly relevant where verbal communication may be impaired through language or hearing difficulties or where patients have difficulty in understanding what might be a complex clinical situation. Photographs are also invaluable in providing a visual aid for patient education when explaining actions that should be taken to maintain or improve oral health: this can add additional impact when the photographs are of the patient themselves. Recently, particularly in the USA there has been a spate of claims of 'black triangles' appearing, following adult orthodontic treatment or periodontal therapy. This interdental papillary loss with open embrasures can be a source of concern to patients, and a library of clinical cases to show patients the occurrence of this problem and possible treatment options will go a long way to explain and communicate the possibility of this happening and address potential patient dissatisfaction and offset possible litigation.

### **Insurance claims related to treatment**

Patients may attend for treatment in response to trauma initiated by a third party or as a result of an accident for example, following an assault or tripping on a paving slab (Fig. 7). These events can result in damage or injury to either facial or intraoral soft or hard tissues. It is important that the true extent of any damage is reported accurately and contemporaneously and clinical photographs provide excellent evidence in supporting any

claim for compensation that the patient may wish to make.

### **Insurance claims related to the practice/clinic**

General photographs of the practice or clinic and specific surgery contents are useful for documenting equipment and valuables for insurance purposes should a loss of these items occur due to a burglary or damage and an insurance claim becomes necessary.

### **Practice publicity**

Increasingly practices are relying on websites to publicise the range of care or facilities provided. This can involve the use of photographs of patients who have been treated successfully and are pleased with the outcome. It must be remembered, however, that all patients must have fully consented to their photographs being used for this purpose and the potential consequences of the images being placed in the public domain. The custom of blocking out the eyes to maintain anonymity is considered inadequate. An example of a consent form is given in Figure 8.

### **Forensic information**

Photography plays a key role in forensic dentistry as is demonstrated by many popular UK television programmes such as *Silent Witness* and *CSI*. Dental forensic specialists were of great assistance in helping identify tsunami victims. Close-up photography can assist in identifying human remains and analysing dental-related trauma, such as bite marks. Adding a photographic record to a written post-mortem dental charting promotes accuracy and reproducibility of

detail. Photographic images are often a vital aid in accurate documentation of perishable evidence. An intense fire may render tissue fragile and friable and a photographic record can be made without disturbing such tissue.

### **Audit and research**

Much dental audit and research requires the recording of accurate clinical data. The use of a carefully standardised photographic protocol can be useful when planning retrospective or prospective clinical studies or audits and can form an important part of the comparative data analysis when determining outcome measures.

### **EQUIPMENT AND TRAINING**

The world of photography has developed rapidly since the first mass-marketed camera (the Brownie) in 1900, the Polaroid camera in 1948 and the first digital camera built in 1975 by Eastman Kodak. Since then the technology has advanced exponentially such that today about 2.5 billion people worldwide have digital cameras and the invention of the camera phone first launched in 2000 has made digital photography instantly available to a vast section of the population.

When considering purchasing equipment for clinical dental photography it is advisable, due to the not inconsiderable financial outlay, to discuss this with professionals experienced in dental photography. The following links will provide a good starting point for obtaining training for the whole dental team and receiving advice about the most appropriate equipment to purchase: [www.dentalphotos.co.uk](http://www.dentalphotos.co.uk), [www.photodent.com](http://www.photodent.com), [www.photomed.net](http://www.photomed.net) and [www.bobrigby.com](http://www.bobrigby.com).

It may be tempting to rely on the multitude of cheap pocket cameras and mobile phones, the quality of which are constantly improving, however, these cameras lack the quality and versatility required for clinical photography. A macro lens with a focal length of 90 mm is ideal for taking undistorted portrait or full face views as well as profile views. A ring flash with through-the-lens (TTL) metering compatible with the camera body is essential to avoid the creation of unwanted shadows. An important advantage of this lens-flash combination is that relatively inaccessible objects deep in the oral cavity can be evenly lit, even when the ring flash is partially obscured by the lips or cheeks and correctly exposed images in difficult areas are still produced. Ring flashes are widely used in photographing body cavities (such as in forensic work), and therefore appropriate for use in intraoral photography. The eyepiece of the single-lens reflex (SLR) viewfinder can be adjusted to suit the individual's

visual requirements (dioptr adjustment). Photographs are framed in the viewfinder as opposed to compact cameras and mobile phones, where the LED screen at the back of the camera is usually utilised. The aperture can be controlled and changed to maximise the depth of field (depth of focus or the range of sharp focus), increasing the image area that appears sharply in focus in the final picture. Apertures can be selected giving an excellent depth of field with, for example, all the teeth in focus from incisors to molars. Electronic through-the-lens (TTL) flash metering is available, which enables a perfect exposure to be obtained without adjusting the aperture every time a different close up magnification view is chosen.

Once set up correctly the system will give consistent and repeatable results both in exposure, magnification and colour rendition so that before and after photographs can be accurately compared. This is particularly important when trying to compare the colour change before and after treatment in terms of hue, value, shade or saturation with restorations such as crowns or veneers.

When photographs are taken using a standardised method, comparisons can be drawn throughout the treatment detailing the specific changes that have occurred during the intervening period, particularly with reference to images of tissues taken before and after treatment. This standardisation is important when using images to support clinical evidence.

The date, time and other information such as the geographical location where the image was taken (geo tagged) and all the camera data and properties about the captured images, are contained within the image and these data can be imprinted on to the photograph. This level of data recording is important particularly when a legal record is required.

## IMAGE FORMAT

The digital single-lens reflex (DSLR) camera is able to record an image in a number of formats. Joint photographic expert group (JPEG) or RAW (so called because the image is not yet processed and therefore not ready to be printed or edited), or both types of files simultaneously on the same disk. RAW is of particular interest to the clinician. Most compact cameras and smart phones record the camera image in the universal JPEG format for ease of use and transmission of electronic images. However, it is a 'lossy' type of file, so called because image information can be degraded and lost when it is opened, edited or saved repeatedly. The RAW format offers unadulterated digital image data, a 'digital negative' giving the

ultimate image quality and information and offers excellent archiving properties. RAW is the best format if submitting the photographs for legal proceedings as it contains the unprocessed data that is read directly from the camera's image sensor and therefore any alteration, post-processing, image enhancement or other 'retouching' of an image can be detected by referring back to the original RAW file. This is particularly useful as documentary evidence in a court of law!

RAW files are large files of between 15 and 20 MB, whereas JPEGs are smaller (around 4 to 5 MB) and therefore require more space on the camera's storage disk (currently secure digital high capacity [SHDC] memory card). Disks are now available of capacities up to 128 GB, however, a 32 GB disk is relatively inexpensive and will store hundreds of RAW images, and obviously many more JPEG files. JPEG files would be accepted legally provided that it is clearly stated that they have not been modified in any way.

## VIDEO CLIPS

Some DSLR camera models also have a 'movie' mode enabling high resolution video clips to be recorded on the camera's secure digital (SD) memory card. This facility can be particularly useful in recording speech patterns, facial movement, effect of local analgesia, occlusal excursions, TMJ movement etc.

Video clips, whether taken with a camcorder, smart phone device or DSLR, of patients undergoing complex dental procedures (for example, dental implants) especially when they are under sedation, can be extremely useful to allay patients' misapprehensions of their treatment and reactions while they are not fully awake. This serves not only as a useful record but aids self-protection; however, filming must only be undertaken with the written informed consent of the patient involved. Video files must be stored securely and unedited within the clinical record, so that it could be produced upon demand by the patient under the Data Protection Act 1998. It is important that the file must be saved in such a way that it cannot be edited.

## IMAGE STORAGE

Radiographs and photographs form part of a patient's clinical records and therefore their personal data and should be maintained in accordance with the principles of good information governance.

Patients have the right of access to their own dental records under the Data Protection Act (1998). If digital images are stored as part of an electronic record, the

dental computer software should be capable of producing hard copies if requested by a patient or if they are needed to respond to a complaint or claim. Digital copies of conventional radiographs taken on acetate films may be readily produced by means of a digital photograph taken while the films are mounted on a suitable light source such as a viewing light box. It is necessary to have a practice policy in place concerning access to records and for it to be made available to patients.

Dental practitioners who process personal data are required to comply with data protection legislation and every practice must register with the Data Protection agency. Under the Data Protection Act (1998), personal data should be processed only for specified and lawful purposes, should be accurate and where necessary up to date, and should be kept secure and protected against accidental loss, damage or destruction.

## IMAGE RETENTION

The Department of Health guidance in the code of practice on retention/disposal of records under the NHS is that practitioners are encouraged to put a maximum period of 30 years on retention of records.<sup>3</sup>

Dental Protection recommends that a patient's clinical records are retained for as long as possible since the time limit for a patient to make a claim is three years from the date of knowledge (but the court does have the discretion to extend this period). The date of knowledge may be many years after the event such as a retained fractured endodontic file. If or when the decision is taken to dispose of records, whether digital or hard copy, after the minimum retention period has elapsed, they must be destroyed without compromising patient confidentiality. Hard copies should be shredded or incinerated and great care should be exercised when disposing of digital data (including photographs) when upgrading computer hardware or deleting electronic files.

## IMAGE TRANSMISSION

Confidentiality should especially be borne in mind when sending electronic images as photographs attached to emails, whether for opinion or consultation with other professionals or to patients, for instance in treatment planning or after completion of treatment to record successful cosmetic dentistry or facial aesthetics. Where images of patients being treated within the NHS are transmitted they can be more securely sent using NHSmail. Where patients are being treated privately it is advisable to add postscript text such as:

This message may contain confidential information. If you are not the intended recipient please inform the sender that you have received the message in error before deleting it. Please do not disclose copy or distribute information in this email or take any action in reliance on its contents: to do so is strictly prohibited and may be unlawful.

When transmitting images electronically there is always the possibility that confidential data may get into the wrong hands. It is therefore preferable to encrypt any electronic files or make them password protected, made even more secure by sending the password via a separate email link.

## CONSENT

If photographs of patients are taken as part of their examination and treatment, then their consent must be obtained with an explanation of the precise purpose of taking the image and how it will be used and stored. It's better to discuss photography with patients in advance, as approaching them with a camera could suggest coercion and mean their consent is invalid. When photographing minors, obtaining the consent of their parent or guardian is mandatory.

The patient's specific written consent must be obtained before using a radiograph or photograph for any other purpose, such as clinical articles, teaching or practice promotion. It is necessary to explain the purpose of disclosing the images; whether or not they will be identifiable; where they will be used; who will see them and any foreseeable consequences. Patients should be reassured that they can withdraw their consent at any time and that a refusal will not in any way affect their future clinical

care. Even with a patient's consent, the GDC guideline is that only the minimum information necessary for the purpose should be released and that if it is not necessary for the patient to be identified then they should not be identifiable. Consent is an ongoing process and it is important to communicate all treatment options and possible outcomes.

In considering the issues of both consent and patient confidentiality, the photographer might not be the person responsible for the patient's dental care. The patient may have sustained trauma or injury and wishes not to have this disclosed to their dentist. However, if the photographer notes some pathology and considers that this should be brought to the attention of the patient's dentist then discussions should take place in order to try and gain the patient's consent to disclose the findings. It is important to keep contemporaneous and comprehensive notes of these discussions for future reference.

## DUTY OF CARE

If a dentist (or trained dental care professional) is taking a photograph of their own patient, then they have a duty of care to act on anything abnormal they see in the image. However, if the patient is being photographed by another dentist for say research or educational purposes but who is not actively responsible for the care or treatment of that patient, then they may not have a 'duty of care' to act on something they see as abnormal. Therefore, should an allegation of negligence be levelled at the dentist taking the photograph who fails to identify an abnormality and then takes no action either directly or indirectly, then it could be argued that there is no direct duty

of care as the dentist was merely taking a photograph of the patient. However, it must be remembered that any GDC registrant has an ethical duty to act in the patient's best interests and take any appropriate action.

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