Chapter

The Tissue Plane

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Abstract

In recent times, terms such as 'interfascial plane block' and 'fascial plane block' have become common in describing regional anaesthesia blocks such as transversus abdominis plane (TAP), serratus anterior plane (SAP) and erector spinae plane (ESP). In fact, none of these names accurately describes the applied anatomy involved in each named technique, as the acronym is only one part of the anatomic jigsaw puzzle. The correct term is 'tissue plane block', which derives from surgical terminology. The tissue plane is not new to regional anaesthesia, as it has been the endpoint of 'loss of resistance' and 'pop' techniques for many decades. However, the game-changer is that now we can see the tissue plane courtesy of ultrasound. The purpose of this chapter is to review the history of the tissue plane in relation to its use in regional anaesthesia, and to see how ultrasound has further advanced the regional anaesthesiologist's options in this regard. The chapter will also review how an understanding of tissue dynamics can further enhance our clinical results by manipulating the characteristics of the tissue plane.

Keywords: tissue plane, ultrasound-guided regional anaesthesia, applied anatomy, TAP block, ESP block, SAP block, rectus sheath block, tissue plane dynamics, dye studies, injectate, hydrodissection, nerve block

1. Introduction

'something old, something new, something borrowed, something blue...'

18th Century English Rhyme

'Something old' – it may have evolved over geological time, it may distort with congenital, surgical, traumatic or other influences, but fundamentally anatomy has been around for a long time. This was wittily expressed by Harrop-Griffiths and Denny [1] in relation to the introduction of ultrasound to regional anaesthesia when they suggested that there are 'no new blocks, just old anatomy'. These authors would undoubtedly agree though that how we look at anatomy can change, and indeed should change as study and scholarship advances our understanding.

'Something new' – the ability of ultrasound to visualise tissue planes provides a new, or more accurately, a newly appreciated target. The explosion of named techniques using ultrasound guidance in the last several years bears testimony to this development in regional anaesthesia practice.

'Something borrowed' - The 'tissue plane' is a concept borrowed from surgical practice [2–4] and it forms the foundation of modern surgical dissection technique. An alternative term for the same idea is the 'plane of dissection'. Surgeons also talk about 'creating' a plane of dissection or 'getting into the correct (tissue) plane' [4]. The key idea which surgeons are emphasising is that of dissecting between structures, and it matters little whether this is with a sharp (e.g., scalpel) or blunt (e.g., finger) instrument. In regional anaesthesia practice, the dissection occurs solely with a blunt (injected fluid) instrument and is termed 'hydrodissection'.

'Something blue' – it has been routine for many years in cadaveric anatomic studies in the regional anaesthesia literature to use methylene blue as a marker to track nerve block placement. These have in effect been studying spread of fluid along tissue plane/s. Once again, we find that this is not so much a new as an under-appreciated phenomenon. A note of caution however – early post-mortem changes in collagen change the structure of connective tissues [5, 6] and therefore the cadaveric model has an inherent flaw when it comes to assessing the dynamics of the tissue plane.

This chapter is divided into the following 10 sections: The tissue plane defined, History of the tissue plane in regional anaesthesia, The modern era of the tissue plane in regional anaesthesia, Tissue plane dynamics and some misunderstandings, Dye studies on tissue plane dynamics, High-definition ultrasound studies and the tissue plane, Tissue plane blocks versus compartment blocks, Systematic reviews, Research opportunities, and Conclusion.

2. The tissue plane defined

A tissue plane is defined as a potential space separating structures such as organs, muscles, nerves and blood vessels [7]. It frequently but not exclusively contains fine loose areolar tissue which is easily divided by both sharp and blunt dissection [2, 8]. The finer quality of these connective tissues contrasts to the much denser connective tissue that forms fascial boundaries, e.g. the prevertebral fascia. This is an important distinction as local anaesthetic will not diffuse across a fascial boundary.

Tissue planes are located throughout the body [2]. Examples include; providing a conduit for nerves, blood vessels and lymphatics from one body region to another e.g., within the femoral canal, [8]; dividing elements of a structure into its component parts, e.g., the brachial plexus [8, 9]; or where structures can be easily separated, e.g., between the fascicles of rectus abdominis muscle and the posterior rectus sheath [10].

The surgeon divides these tissues with scalpel, scissors, probe or finger and in so doing creates the plane of dissection in order to excise tissue or access an anatomic area. In surgical practice there is also a plane of dissection which creates less bleeding, the so-called 'avascular plane' [2]. By contrast the regional anesthesiologist injects a bolus of fluid which spreads along and through the tissue plane/s, not so much dividing as separating the tissues and then diffusing into the nerve/s to create a conduction block.

It is important to keep reminding ourselves that the tissue plane is a concept, not actual anatomy. It points towards tissues which are easily dissected/divided vs. tissues which are not. In regional anaesthesia the tissue planes of interest contain nerves. In this respect it is required to know which nerves may be blocked, where and what they innervate, how and where to access the tissue plane safely and how the tissue plane/plane of dissection will spread the injected solution.

3. History of the tissue plane in regional anaesthesia

While the tissue plane concept is fundamental to surgical dissection technique [2–4], the lack of emphasis on its importance in regional anaesthesia is perhaps ironic given the number of publications in the literature which have in fact related to it prior to the introduction of ultrasound [11–34]. Indeed, the terms 'loss of resistance' and 'pop' refer to techniques accessing tissue planes, although they have not traditionally been described in that fashion.

The lack of acknowledgement of the tissue plane concept changed abruptly in 2007 with the publication of TAP (transversus abdominis plane) block [35]. In this paper the authors described the tissue plane between the fasciae of internal oblique and transversus abdominis muscles as a 'fascial plane' and then called it the 'transversus abdominis plane'. The fascial plane label stuck as did the name TAP and the search was on for others which surfaced in quick succession [36–43]. This pursuit for new targets was undoubtedly promoted by the emerging use of ultrasound and it is fair to say that subsequently there has been an explosion of interest across the spectrum of practice [44–83]. The terms 'fascial plane block' and 'interfascial plane block' have been further promoted [84] although more recently 'tissue plane' has been used [9].

The common theme of course is that all of the above involves the study of tissue planes and their dynamics of solution spread. As in surgical practice the tissue plane concept has been and is fundamental to the practice of regional anaesthesia.

4. The modern era of the tissue plane in regional anaesthesia

In the modern era, the rules have changed with the introduction of ultrasound. Now we are able to directly visualise tissue planes and at least in theory, manipulate them to our clinical advantage. While we now have a significant advantage with this development, a greater need for understanding the concept and its relevance to regional anaesthesia has arisen. A headlong rush to discover and name new blocks has often preceded the basic scientific work that should have underpinned the practice. Soft endpoints (e.g., 'we have done 20 and they worked well') and generic terms (e.g., 'multimodal analgesia') have the potential to hide the fact that a particular technique does not achieve the intended effect.

Added to this is a confused nomenclature. Surgical specialties have long used the term 'tissue plane' with a clear understanding of its meaning and it would seem odd to borrow this concept and claim it for regional anaesthesia under revised names. That being said, this author would also argue that for historic reasons it is important to retain the original name of individual techniques since these are the names given by authors to their techniques and which have been accepted through a peer-review process.

In the following paragraphs, we examine several of these techniques through the lens of intended clinical application versus anatomic scientific foundations.

PECS block was originally published as a technique to provide analgesia following breast surgery [37]. The name refers to the tissue plane between pectoralis major and pectoralis minor muscles, and the aim is to block the medial and lateral pectoral nerves which derive from the brachial plexus. This creates somewhat of a dilemma as the pectoral nerves do not innervate the breast. There have been modifications since, possibly reflecting that fact and correcting the record somewhat.

The pecto-intercostal fascial block was first published as an analgesic technique for breast surgery [52] and anterior chest wall trauma [53]. It aims to block the anterior cutaneous sensory branches of the intercostal nerves where they penetrate the chest wall near the edge of the sternum. Whilst the cutaneous termination of the intercostal nerves T2-T6 do innervate the skin over the medial aspect of the breast, these same cutaneous sensory nerves do not innervate the bony structures of the anterior chest wall. Further study of the relevant tissue planes is awaited.

By contrast, the superior cluneal nerve block was first published as a very different type of anatomic study [85]. These nerves derive from the first three lumbar dorsal rami and innervate the skin over the buttock area. This technique creates a plane of dissection just deep to the superficial layer of the thoracolumbar fascia in its inferolateral aspect. The authors of that paper first studied a cadaveric model, but then in recognition of the inherent flaws of such modelling repeated the block in volunteers with accompanying mapping of sensory loss against potential surgical incisions. The accompanying editorial suggested that new techniques required similar basic science study so that in the clinical environment, we know exactly what we are doing and what we can expect to achieve [86].

Erector spinae plane block (ESP block), an injection into a tissue plane deep to the erector spinae group of muscles, has quickly become one of the most popular techniques since its first description [60]. It was almost immediately accompanied by multiple case reports with dramatic claims of efficacy [87–90]. There followed several quite different randomised controlled trials with claims of efficacy [91–94], and the indications for the technique have multiplied almost exponentially [95]. The source of greatest debate has seemed only related to the mechanism of action. A cadaveric study [65] disputed the theory that there was adequate spread of local anaesthetic to the ventral rami and instead suggested local anaesthetic spread to the lateral cutaneous branches of the ventral rami through the lateral aspect of the tissue plane. The original authors then followed up with their own cadaveric study [66] showing spread to the ventral rami and hence providing a mechanism of action for their observed results. The tie breaker in this debate was a volunteer study [96] which demonstrated inconsistent spread of injectate to the ventral rami. Hence the enthusiasm to use ESP block has far outrun our understanding of the technique. Can this enthusiasm cause harm? Yes, by lack of effect or failure to use alternative techniques of known efficacy. Some hospitals now run programs using continuous ESP block for rib fractures – one wonders how they work when the ribs are innervated by the ventral rami, and the lateral cutaneous nerves neither pass through the erector spinae group of muscles nor innervate the ribs. Hence the exact role of ESP block remains uncertain.

Continuous rectus sheath block has re-emerged as an option for analgesia post-midline laparotomy. The modern version of placement is a surgical technique, where a plane of dissection is developed between the rectus abdominis muscle and the posterior rectus sheath with a catheter placed in the ensuing compartment for upper abdominal procedures [10], and a plane of dissection developed between the rectus abdominis and the anterior rectus sheath for lower abdominal procedures [97]. It took little time for ultrasound-guided versions of the same technique to emerge [38, 39], although for the majority of placements there is little logic in placing the catheters percutaneously after the wound has been surgically closed [98]. It is suggested that an approach with ultrasound might be indicated if there is intraabdominal sepsis or adhesions making surgical access to the tissue plane unwise or impossible. In this scenario, avoidance of lateral approaches to the rectus sheath is recommended due to the risk of perforation of the epigastric vasculature. There have now been two dye studies confirming the spread of local anaesthetic throughout the developed tissue planes for rectus sheath block [99, 100]. One study demonstrated that inferior to the arcuate line where the posterior rectus sheath is less distinct, a tissue plane containing the relevant abdominal wall nerves lies between rectus abdominis muscle and the transversalis fascia [99], while the other demonstrated the importance of volume to ensure spread of solution across the tissue plane [100]. It is important to note that both of these studies used boluses and this has management implications for continuous systems.

Pericapsular nerve group (PENG) block is a recently published tissue plane block. First described in 2018 [69] it has been accompanied by multiple clinical reports and recently a randomised controlled study in the hip fracture population [101]. Whilst it appears remarkably effective for analgesia for hip fractures, the reasons for this are yet to be fully answered. It purports to block just the sensory branches to the hip joint from the femoral and obturator nerves [69]. Could there also be spread further posteriorly to include the superior gluteal nerves? A dye study [102] sheds some light on the characteristics of spread in this tissue plane deep to iliopsoas muscle. In this study, the needle was slightly more caudad to the site of PENG block but in the same plane and suggested that restriction of spread of injectate was only possible with small volumes. Larger volumes could spread to reach the femoral nerve, defeating the purpose of the technique. In this respect, is this tissue plane limited anteriorly by iliopsoas muscle fascia or by fascia iliaca, the latter being suggested by the spread characteristics of the larger volume in the study?

The IPACK block (infiltration between the popliteal artery and the capsule of the knee) for analgesia post-total knee joint replacement was introduced in 2019 as a cadaveric study [103] although there had been keen interest in this area in the years prior but without an accepted name for the technique [104–106]. A plane of dissection is developed deep to the popliteal artery with the intention to bathe the articular sensory branches of the knee joint in local anaesthetic as they traverse this area to reach the joint capsule. Since 2019 there have been over 10 randomised controlled trials [107–118] and 3 meta-analyses [119–121] reflecting widespread interest in techniques which might provide pain relief without hindrance to ambulation post-total knee joint replacement. There has also been widespread adoption of the IPACK block as reflected by reports of programmes in the literature [122, 123]. It is therefore somewhat concerning that the meta-analyses are not supportive of the technique, at least in its current format. Has enthusiasm outweighed clinical realities in this particular circumstance? Is this a technique that has yet to find its real indication? Or could the literature somehow not be accurately reflecting current effective clinical practice?

5. Tissue plane dynamics and some misunderstandings

In 2006 we published a paper in Anesthesiology which was provocatively entitled 'The Sheath of the Brachial Plexus: Fact or Fiction?' [7]. It may have been better entitled 'The Sheath of the Brachial Plexus: Actual Anatomy or Concept?', as negative reaction to the title may have distracted from what we believed to be the importance of the paper. This was a discussion about tissue planes and their significance to the practice of regional anaesthesia and to our knowledge the first time this had been directly addressed in the literature.

The notion of the brachial plexus 'sheath' has been attributed to various authors [124–126]. Two of these authors were in fact referencing the brachial fascia which is the deep investing fascia of the arm [125, 126], and one also referenced the intermuscular septum of the arm [126]. This is confusing as neither fascia is in intimate relationship with the neurovascular bundle.

Winnie [11] subsequently suggested that the 'sheath' was merely the final part of a tubular prolongation of the prevertebral fascia and promoted the concept of a continuous fascia-enclosed space extending from the cervical transverse processes to several centimetres into the arm. He likened brachial plexus anaesthesia to epidural anaesthesia where, once the space had been entered only a single injection was needed, an analogy intended to stop practitioners performing multiple injections which thereby increased the chances of neural injury. Various publications subsequently presented findings which significantly modified his concept [14, 16, 18, 20, 23, 28, 68].

The discussion section in our paper addressed tissue planes and their dynamics. The tough tissues of the prevertebral fascia give way rapidly to much thinner, softer and translucent connective tissues which encircle and entwine the brachial plexus and blood vessels [8]. As a collective, these thin and translucent connective tissues form the tissue planes of the brachial plexus. Indeed, in the current age of ultrasound-guidance the presence of these tissue planes is well accepted [9].

Within the tissue planes there may be minimal room for expansion at any one point and therefore flow has to occur along the tissue planes according to resistances encountered along the way [7]. The layers of connective tissue are not homogeneous, do not necessarily interconnect, and can hinder or prevent diffusion. Injection at one point does not guarantee spread elsewhere [8]. At the level of the trunks and divisions of the brachial plexus, the neural elements reorganise significantly and their associated tissue planes interconnect. This is readily observable during surgical dissection [8]. This arrangement allows for a more even spread of solution, a feature which has indeed been observed clinically [9, 127–130]. The belief that supraclavicular blocks are more effective because the neural elements are closer together [131] is better explained by the interconnection of tissue planes at this level. By contrast, at axillary level where the nerves do not interconnect and the tissue planes containing each nerve are largely separate [14, 16, 18], efficacy is lower unless each nerve was blocked separately. Side effect profiles can also be explained by spread of injectate via tissue planes, e.g., phrenic paresis with subomohyoid suprascapular nerve block [132].

The sheath concept also does not take into account the impact that surrounding rigid anatomy has on flow dynamics. Our work on the 'axillary tunnel' [133] calculated the dimensions of the tunnel and explained the significant impact of the varying dimensions. The injected dye did not spread as in a cylindrical tube but followed the contours of the rigid anatomy. The volume of the axillary tunnel at any one point was less than 10 ml, and so flow inevitably occurred along the tunnel. The tunnel had two constrictions and flow of injectate from the needle tip could be anterograde, bidirectional or retrograde depending on where the point of injection occurred in respect of these constrictions. The more lateral constriction was clearly the obstruction to flow at this lower level [133] rather than the head of the humerus as previously described [134]. Historic dye studies of the brachial plexus [11, 134] fitted with our predictions of flow patterns based on the contours of the rigid anatomy.

The CT dye studies from the axillary tunnel work also revealed the reason we were able to avoid the phrenic nerve during anaesthesia and analgesia for shoulder surgery [135]. We were manipulating the tissue planes of the brachial plexus by injecting into the tissue planes posterior to the artery, with retrograde spread restricted to these same tissue planes, well away from the anteriorly situated phrenic nerve. This phenomenon has subsequently been demonstrated by another group [136].

Given that brachial plexus regional anaesthesia had been based for many years on the concept of the sheath, it was unsurprising that a cadaveric study was subsequently published demonstrating apparent macroscopic evidence of the brachial plexus sheath [137]. We had significant issues with this evidence, including: 1. a significant connective tissue structure was demonstrated covering the emerging nerve roots in the root of the neck, but this was the prevertebral fascia. There were difficulties with calling this the brachial plexus sheath, partly because it already had an anatomic name. 2. the brachial plexus, as revealed prior to disappearing from view under the clavicle, was covered by a thin layer of opaque connective tissue. It was agreed by both sets of authors that this was what had been identified as the enveloping tubular structure called the sheath. This opaque connective tissue enveloping the plexus in the cadaver was remarkable for its difference to the equivalent tissue in a patient undergoing surgical dissection of the plexus [8], and we believe that this most likely reflected post-mortem changes in connective tissues [5, 6]. Interestingly, not all investigators using cadaveric specimens have encountered an opaque layer of connective tissue surrounding similar major nerves or plexuses. Indeed, they have echoed our words of 'thin, transparent and fragile' when describing such connective tissues [138].

We concluded that tissue planes, in conjunction with the influence of surrounding rigid anatomy, provided a better explanation for outcomes in brachial plexus regional anaesthesia than the concept of a sheath.

6. Dye studies on tissue plane dynamics

The regional anaesthesia literature already has a reasonably large number of dye studies [11–34, 44–51, 54–68, 70–83] and they encompass most of the techniques in current common usage. One could be forgiven for believing that we now have most of the answers, but this is an area where for various reasons there is still room for improvement. Our work on the axillary tunnel raised some generic questions to be answered in other areas – under what conditions do flow characteristics change, can flow characteristics be manipulated to clinical advantage and what anatomic features can be disadvantageous in terms of flow characteristics? These questions infer that the tissue plane is a dynamic environment and that this can be used to clinical advantage.

It has been unusual in this type of research work to use any model other than cadavers but for various reasons these cannot provide an accurate replication for clinical application. Connective tissue changes in quality and appearance very soon after death [5, 6]. As pointed out by Ivanusic et al. [65] it is also not possible to investigate for any block-related phenomenae that may be linked to physiological occurrences such as breathing in a dead body. Specific block-related positioning is not possible in cadaveric specimens. At best, with carefully planned and executed dissection, cadaveric models provide a sort of basic static road map of where fluid may spread and what nerve/s might be blocked.

In the above context a dye and latex study by Mayes et al. [139] investigated serratus anterior plane block (SAP) as a potential analgesic technique for rib fractures. It demonstrated a clear plane of dissection between serratus anterior and the external intercostal muscle/ribs, bathing the lateral cutaneous branches of the intercostal nerves in solution as per the description in the original publication [42]. This means that the technique will not provide analgesia for rib fractures, a conclusion framed by the authors in subtle language [139], because the intercostal nerves which innervate the ribs will not be blocked. Does trauma to the chest wall provide a pathway to these nerves? This is unlikely and not a dependable mechanism in this author's opinion. Can solution track along the lateral cutaneous branches to the intercostal nerves of origin? This again is unlikely as it requires the passage of these nerves through the muscle layers of the chest wall to be the path of least resistance as the injected fluid flows through the tissue plane. It is up to those who wish to prove any of these mechanisms to create the models and test their hypotheses.

Another technical issue at play in dye studies relates to where the tip of the catheter is located when injections are made. In a study on continuous parasacral sciatic nerve block [31], the investigators used 8 ml of dye for confirmation of location of their perineural catheters. In our work on the axillary tunnel [133], we realised that we could only locate the tip of the catheter by using a much smaller volume of injectate of 2 ml, a larger volume obscuring the location.

Adductor canal block [54] has gained popularity as an analgesic technique post-total knee joint replacement due to less motor block than femoral nerve block [140] albeit with some accompanying loss of pain relief [140, 141]. There have been several dye studies examining this technique [142–145], with ensuing cautions about volume used, where the injection is placed to limit spread of injectate beyond the adductor canal, and consideration of the impact of tourniquets on the spread of solution. However, there has been no work directly measuring the potential volume of the canal, nor how this might change with application of a tourniquet, nor what flow restrictions if any are present, all of which would require 3-dimensional imaging. This is a more costly investigative modality but provides much more information.

The cadaveric dye studies of ESP block [64, 65] and the subsequent volunteer study of ESP block [96] have been discussed earlier in this chapter. Perhaps this illustrates the peril of having cadaveric studies as stand-alone evidence of efficacy. The volunteer study certainly seems to be one potential bridging option to clinical practice but may not always be possible due to safety considerations. Some authors do combine their cadaveric studies with a clinical case series as additional evidence, but is this practice consistent with the current ethical standards in human research? Multiple pathways are probably likely required to establish efficacy and safety across the range of techniques and indications prior to widespread adoption in clinical practice. In this respect, randomised controlled trials are only as good as the science which underpins them.

7. High-definition ultrasound studies and the tissue plane

There have now been several studies examining nerves of the upper and lower extremities and the soft tissues which surround and envelope these nerves [146–149]. These have given rise to the term 'paraneural sheath' of the sciatic nerve [146] and brachial plexus [149] respectively. In one recent study, the sonographic imaging was correlated with histologic specimens [149] to demonstrate what the authors described as 'fascial tissue planes' within the paraneural sheath.

It is to be noted on the images of the brachial plexus [149] that the pectoral fascia is much more visible, i.e., it exhibits greater anisotropy, than the tissues within the plexus complex. This is not artefactual – fasciae such as the pectoral or prevertebral are much sturdier connective tissue structures than the relatively fragile connective tissues surrounding the brachial plexus. The imaging also demonstrates both the tissue planes of the plexus and the phenomenon of injected fluid separating the tissue planes as it flows through the length of the plexus complex. The 'paraneural sheath' has the same anisotropy as the tissue planes within the neurovascular bundle, i.e., the same type of tissue, which is quite distinct from fascial tissue. This study demonstrates very well some characteristics of the dynamics of the tissue planes of the brachial plexus.

8. Tissue plane blocks versus compartment blocks

In some literature it has been suggested that the local anaesthetic fills a compartment to achieve its effect, particularly where the injection is made within the fascia enclosing muscles such as rectus abdominis or perhaps even the erector spinae plane block [150]. The actual phenomenon can be viewed on ultrasound in real time as the injected solution can be seen to develop a plane of dissection between the muscles and the fascia or bone. Once again, the concept of the tissue plane becomes the focus of our attention.

9. Systematic reviews

There have been a number of systematic reviews over the last few years which have not specifically mentioned tissue planes in the context of regional anaesthesia but which clearly relate to that concept [151–164]. These have all been procedure specific and, despite apparent clinical enthusiasm for the different techniques, are quite often neutral or negative in their recommendations. This may reflect the difficulties in the development phase of various techniques to which the author has alluded earlier in this chapter.

10. Research opportunities

There is a wealth of opportunity for further research in this area. Regional anaesthesia in some respects is in its infancy in understanding and manipulating tissue planes. Ultrasound allows novel tissue plane targets to emerge and the challenge is to fit these new techniques into practice in a scientifically sound fashion. Now more than ever we are required to learn anatomy from a different perspective; what nerve/s innervate this area/region? how do they get there? where can I access them? does this raise safety issues, and how are these overcome? how will the tissues spread the fluid I inject? are there potential complications from this? how do I answer these questions in a scientifically meaningful fashion? do I need to create a new technique when one already exists for my purposes?

I would venture to suggest that after the initial idea comes thoughtful reading, basic science preparation and careful analysis. This is all before consideration is given to conducting randomised controlled trials.

11. Conclusion

Although it has been suggested by many to be the era of ultrasound in regional anaesthesia, it could equally be termed the era of the tissue plane. This of course is courtesy of ultrasound, but the technology alone will not get us the results we want. It has been suggested that 'if we can see it, we can block it' [84], but this invites invocation of the old adage 'primum non nocere'. Was the block necessary? Did it add real benefit? All interventions risk harm. Perhaps we could change the saying to 'now that we can see it, how do we better understand what we are seeing, and how can this aid our practice?' The challenge is to methodically and responsibly work our craft so that it helps us as well as our patients.

Conflict of interest

The author declares no conflict of interest.

Notes/thanks/other declarations

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