Neuro-Oncology Imaging in Litigation:

A Practical Guide for Solicitors

This guide is designed to help solicitors approach neuro-oncology imaging evidence with greater confidence and precision. Drawing on practical case studies, it explains how imaging can influence breach, causation, treatment decisions and expert evidence in brain tumour litigation.

Readers will learn why a scan should never be viewed in isolation, why retrospective visibility does not always equal negligence, and how issues such as pseudo-progression, missed lesions, tumour misclassification, suboptimal imaging protocols and MDT decision-making can materially affect a claim. The guide also highlights the questions solicitors should be asking when reviewing records, instructing experts and analysing whether earlier diagnosis or different treatment may have changed the outcome.

Its purpose is not to provide radiology training, but to help solicitors identify where the real legal and evidential issues may sit in complex neuro-oncology cases.

This eBook has been produced by INNEG, drawing on key clinical insights shared during our webinar, Neuro-Oncology Imaging in Litigation: A Practical Guide for Solicitors, presented by Prof. Sotirios Bisdas, Consultant Neuroradiologist and MRI Lead.

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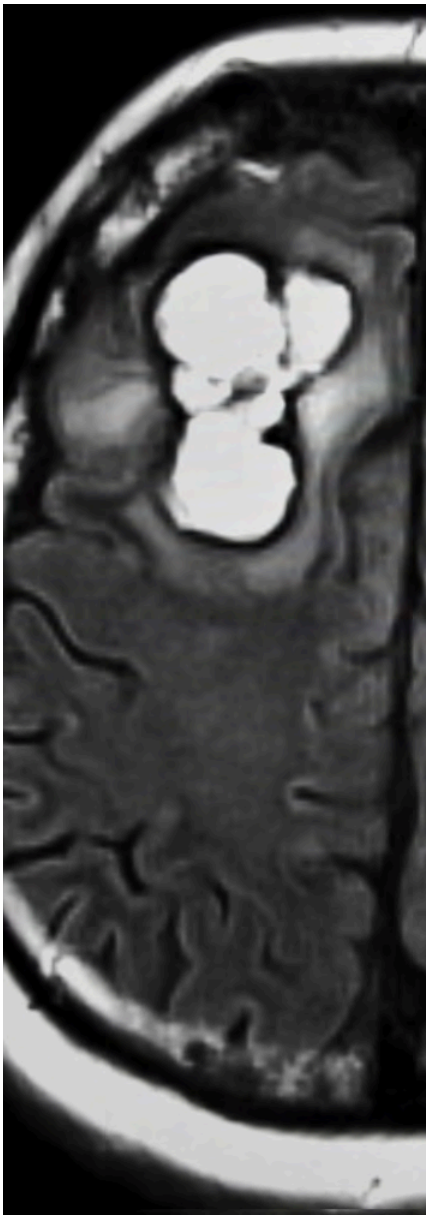
Introduction

Neuro-oncology claims rarely turn on imaging alone, but scans often shape the direction of the case. In delayed diagnosis, misdiagnosis, treatment withdrawal and causation disputes, the key question is not simply whether a lesion was visible, but whether the imaging was appropriate, interpreted in context, compared against the correct baseline and properly considered by the MDT.

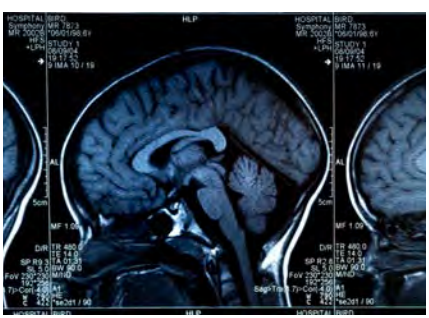
The case studies from Professor Sotirios Bisdas' webinar show why solicitors should be cautious about relying on hindsight. A lesion that appears obvious after diagnosis may not have been obvious at the time, especially where scan quality, clinical history or imaging protocols were limited. Equally, a report that seems reasonable in isolation may look very different once the wider clinical context, MDT records and treatment decisions are reviewed.



Why Imaging Evidence Is Often More Complicated Than It Looks

In an ideal world, neuro-oncology imaging would be performed with consistent high-resolution protocols, reported using structured response criteria, and reviewed in a specialist MDT with clear documentation of who said what and why. In the real world, the imaging in a litigation bundle is often much messier. Protocols vary between hospitals. Sequences may be missing. Follow-up scans may not be comparable because they were acquired differently. Reports are often written in prose rather than structured language. Ambiguous wording may make it difficult to know whether the reporting radiologist appreciated the significance of the finding.

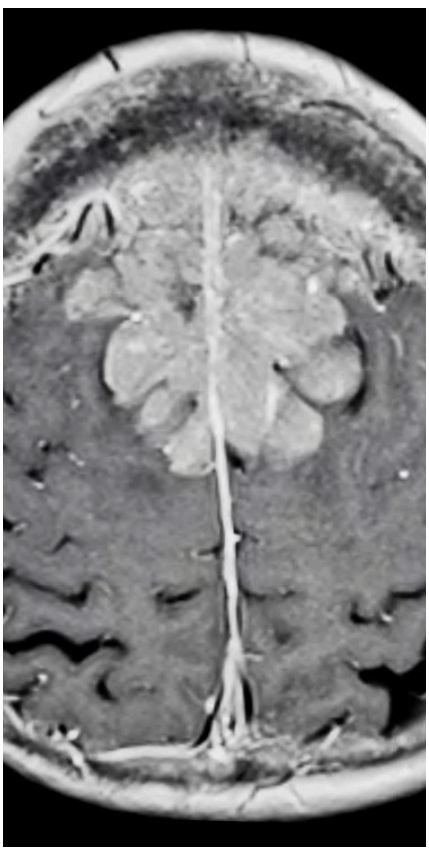
This matters because litigation is concerned with what was reasonable at the time, not what would have been ideal in a tertiary neuro-oncology centre. A district hospital scan should not automatically be judged against a textbook-perfect imaging pathway. At the same time, the limitations of local practice do not excuse every omission. The key question is whether, given the clinical presentation and the imaging available, a reasonable radiologist or neuroradiologist should have identified the issue, recommended further imaging, escalated the case, or sought specialist review.



Solicitors should also avoid treating the MRI report as the final answer. The report is part of the evidence, but it is not the whole evidential picture. In neuro-oncology, the MDT is often where imaging is reinterpreted in light of the clinical history, operative findings, pathology, molecular classification and treatment options. A competent neuroradiologist sitting in the MDT may change the treatment plan by identifying progression, pseudo-progression, recurrence, radionecrosis or the need for advanced imaging. If the MDT minutes are missing, incomplete or vague, the litigation problem becomes harder. It may be impossible to know whether the relevant imaging concern was raised, ignored, misunderstood or never considered.

The practical point is blunt: if the case theory depends on imaging, the solicitor needs more than the scan report.

The solicitor needs the images, the protocol details, the clinical request form, the MDT records, the follow-up imaging, the oncology correspondence, the histology and molecular classification, and the chronology of treatment decisions.



Case One: Pseudo-Progression and Premature Treatment Withdrawal

The first scenario concerns a patient with glioblastoma who underwent surgery followed by chemoradiation. An early post-treatment MRI was interpreted as showing progression. On that basis, adjuvant treatment was stopped and the patient was moved towards a less effective or riskier second-line option. The allegation was that the patient lost a survival opportunity because the imaging had been misunderstood.

This scenario is legally important because worsening imaging after treatment does not always mean true tumour progression. In glioblastoma, early post-treatment changes can mimic progression. This is known as pseudo-progression. The tumour may appear larger or more active shortly after chemoradiation, but the apparent worsening may be a temporary treatment-related effect rather than genuine tumour growth. If the MDT treats pseudo-progression as true progression, the patient may be taken off a beneficial treatment too early.

For solicitors, the first issue is the baseline. A common mistake is to compare later imaging with the wrong earlier scan. In neuro-oncology, the correct comparator is not always the pre-operative or diagnostic MRI. After surgery and chemoradiation, the relevant baseline may be the post-radiotherapy MRI. If the wrong baseline is used, the apparent change in tumour size or enhancement can be misleading.

The breach questions should therefore be precise. It is not enough to ask whether the scan showed progression. The better question is whether a reasonable neuroradiologist, in the clinical context and at that treatment stage, should have recognised pseudo-progression as a realistic possibility. The solicitor should also ask whether that possibility was clearly communicated to the MDT, whether further imaging or a short interval follow-up was recommended, and whether treatment was withdrawn before there was sufficient radiological confidence that the disease had truly progressed.

Causation will usually require both neuroradiology and neuro-oncology evidence. The neuroradiologist can address what the imaging showed, whether pseudo-progression should have been suspected, whether further imaging was indicated, and what changed during the relevant period. The neuro-oncologist then has to translate that into treatment consequences, survival impact and functional outcome. A solicitor who asks the neuroradiologist to determine survival loss alone is asking the wrong expert to answer the wrong question.

This case study also exposes a recurring defence argument. The defendant may say that the tumour was aggressive, the prognosis was poor, and any different decision would not have changed the outcome. That may be right in some cases, but it is not a complete answer unless the imaging timeline has been properly analysed. The relevant question may be whether premature treatment withdrawal materially worsened an already serious condition or deprived the patient of a realistic treatment opportunity. The evidence has to be built carefully, not asserted.

Case Two: The Missed Lesion and the Risk of Hindsight Bias

The second scenario involves a 42-year-old patient with progressive diplopia. The MRI was reported as normal and the symptoms were treated as presumed microvascular nerve palsy. A later retrospective review identified a lesion on the original MRI which appeared to explain the diplopia.

This is the archetypal missed lesion claim, but it is also the type of claim most vulnerable to oversimplification. The fact that a lesion is visible retrospectively does not automatically mean it was negligently missed. The correct question is whether the lesion should reasonably have been identified at the time, on that scan, with that clinical information, by a reasonably competent radiologist or neuroradiologist.

Diplopia is a symptom that can have small and subtle structural causes. A lesion responsible for diplopia may be difficult to detect, especially if the imaging protocol was not optimised for the clinical question. The solicitor must therefore separate two issues which are often wrongly merged. The first is perception: was the lesion there to be seen and did the radiologist fail to see it? The second is protocol: was the scan itself adequate to detect the kind of lesion that the symptoms should have raised concern about?

A strong claimant case may exist if the lesion was visible, clinically relevant, located in an area that should have been scrutinised given the history, and identifiable on an adequate scan by a reasonable specialist. A weaker case may exist if the scan quality was poor, the protocol was generic, the clinical history was incomplete, or the lesion was only obvious once the later diagnosis was known.

This is why blinded retrospective review can be valuable. If an expert is told the final diagnosis before reviewing the original imaging, there is a risk that they will search for the answer rather than assess the scan as it would have appeared at the time. A better approach may be to give the expert the contemporaneous clinical presentation but not the later diagnosis, at least for the first-pass review. That does not remove judgment from the process, but it reduces the risk of hindsight bias.

The solicitor should also consider the role of the referring clinician. If the clinical request form reduced a complex neurological presentation to a few vague words, that may affect protocol selection and reporting focus. The reporting radiologist may still have duties, but the case may become one of shared or apportioned responsibility rather than a simple radiology miss.

The litigation value of this case study is that it forces discipline. Do not plead the case as “the lesion was there, therefore it was negligent.” That is lazy and vulnerable. The stronger formulation is that, given progressive diplopia and the imaging appearances available at the time, a reasonable radiologist or neuroradiologist should have identified the abnormality, recommended further specialist review, or advised additional imaging.

Case Three: Misclassification of a Temporal Lobe Tumour

The third scenario concerns an adult patient presenting with seizure activity. MRI identified a temporal lobe lesion, but it was reported as probably benign, such as a cyst, and no follow-up was recommended. Two years later, repeat imaging showed progression to a low-grade tumour, with the patient having developed cognitive and neurological symptoms.

This is not a simple missed lesion case. The abnormality was seen, but it was allegedly misclassified. That distinction matters. The issue is not whether the radiologist failed to detect something. The issue is whether the interpretation was reasonable and whether the appearance and clinical presentation should have triggered follow-up, specialist neuroradiology review, or advanced imaging.

Adult-onset seizures are a red flag for an underlying structural lesion, including tumour. A temporal lobe lesion in that clinical context should not be casually dismissed without a clear basis. If the imaging features were genuinely consistent with a benign cyst, the report may be defensible. But if the appearances were indeterminate, atypical, or insufficiently characterised, then the absence of follow-up may be difficult to justify.

For solicitors, this case study raises an important evidential question: what did the report actually say? Words such as “probably benign,” “likely cystic,” “non-specific,” or “no concerning features” need close analysis. Vague reassurance can be dangerous if it closes down follow-up when the clinical

picture demands caution. A report does not have to use dramatic language to be negligent. Sometimes the problem is the failure to express uncertainty and recommend the next step.

The next issue is escalation. If a district general radiologist encounters an indeterminate temporal lobe lesion in an adult with seizures, should the case be referred to a neuroradiologist or neuro-oncology MDT? In many cases, that will be the central breach question. The solicitor should not assume that every radiologist must personally resolve every complex lesion. The more realistic criticism may be that the case should have been escalated.

Advanced imaging may also matter. Techniques such as perfusion MRI, spectroscopy or other specialist sequences may help distinguish tumour from non-tumour pathology. The legal question is not whether every advanced tool should always have been used. The question is whether, at the relevant date and place, further imaging or tertiary advice was reasonably available and whether it would have materially changed the reliability of the conclusion.

Causation in this scenario can be difficult. Low-grade gliomas may grow slowly, but they may also transform over time. The timing of transformation is often hard to prove. A neuroradiologist may be able to analyse serial imaging and approximate radiological change, but they usually cannot identify the exact date of tumour onset or transformation. The solicitor will need neuro-oncology evidence on whether earlier diagnosis would have changed treatment options, neurological outcome, seizure control, cognition, survival, or quality of life.

Case Four: Suboptimal Imaging Protocols and Vague Neurological Symptoms

The fourth scenario is a composite case involving a 39-year-old patient with cognitive symptoms, headaches or other non-specific neurological complaints. A limited or abbreviated imaging protocol was used, the case was treated as routine, and abnormalities were later said to be retrospectively visible.

This is a common real-world problem. Patients with vague neurological symptoms may not trigger the same urgency as patients with obvious focal deficits. In district hospital settings, the imaging protocol may be generic rather than tailored to the clinical question. The scan may be shorter, less detailed, or missing sequences that would be expected in a specialist neuro-oncology pathway. The radiologist may also approach the scan as routine, which increases the risk of perceptual error.

The legal issue is not simply whether the abnormality was visible. The solicitor needs to ask whether the protocol was fit for purpose. If the clinical presentation suggested a possible structural or tumour-related cause, was a generic brain protocol enough? Should contrast have been used? Were the necessary sequences obtained? Was the case vetted by someone with appropriate expertise? Did the radiographer or administrative process select the protocol without meaningful neuroradiology input?

The Q&A discussion in the webinar is important here. Professor Bisdas' view was that protocol choice is primarily for the neuroradiologist, provided the referring clinician has described the clinical picture properly. That qualification is crucial. Protocol failures can arise from weak clinical information at the request stage, weak vetting, or a radiology department workflow where protocol selection is effectively delegated away from the specialist who should be making the decision.

For solicitors, this means the request form is not a minor document. It may be central. If the referring clinician gave a poor history, the claim may not sit neatly against radiology alone. If the history was adequate but the wrong protocol was selected, the focus may shift towards radiology systems, vetting and departmental practice. If the protocol was acceptable but the report missed an abnormality, the case becomes more conventional interpretation negligence.

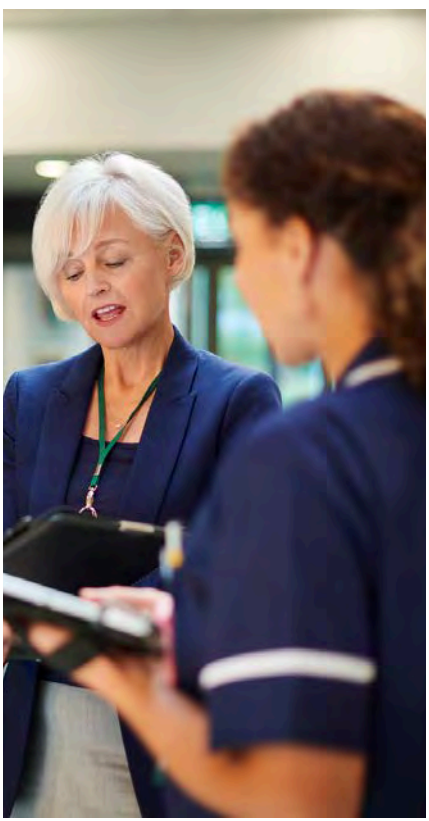
This scenario also raises system breach. A hospital may argue that its routine protocol reflected local practice. That may be factually true but legally insufficient if the protocol was not adequate for the clinical question. The solicitor needs expert evidence on what was reasonable in that setting at that time. The standard is not perfection, but nor is it whatever the local department happened to do.

Causation will depend on what a better protocol would probably have shown and what would probably have happened next. If a proper protocol would have revealed a lesion earlier, the solicitor then needs to establish whether earlier diagnosis would have changed management. That may involve neurosurgery, neuro-oncology, neuroradiology and sometimes neuropsychology evidence. The imaging expert can open the door, but they cannot walk the whole causation case through it alone.

The MDT as a Legal Battleground

Across all four case studies, the MDT is a recurring theme. Modern neuro-oncology care is not delivered by a single clinician acting alone. The MDT brings together neuroradiology, neurosurgery, neuro-oncology, radiation oncology and, where relevant, other specialists. The neuroradiologist's role is not passive. Their interpretation can change diagnosis, treatment planning and follow-up.

For solicitors, the MDT matters because it may either support or undermine the alleged breach. If the radiologist's report was ambiguous but the MDT properly reviewed the images and made a reasonable plan, the causal link may weaken. If the MDT relied uncritically on a flawed report, the case may broaden. If the MDT minutes show that neuroradiology concerns were raised but ignored, responsibility may move towards the clinical decision-makers. If the minutes are missing or record only the final decision, it may be difficult to attribute fault to any individual.



The absence of MDT minutes should not be treated as a technical inconvenience. It can materially damage the evidential structure of the case. Without minutes, it may be unclear who attended, what imaging was reviewed, what alternatives were discussed, whether dissent existed, and whether further imaging was considered. In some cases, the lack of documentation may itself support criticism of the process. In others, it may simply make the case harder to prove.

Solicitors should request the full MDT records early. A final MDT outcome or “votum” may not be enough. The useful evidence is often in the reasoning, not the conclusion. Who reviewed the scans? Was the imaging compared with the correct baseline? Was pseudo-progression considered? Was recurrence distinguished from radionecrosis? Was advanced imaging discussed? Was referral to a tertiary centre considered? Was the patient told about reasonable treatment options not available locally?

Treatment Options and the Duty to Inform

The webinar also raised a difficult question: should clinicians inform a patient about treatment options that are reasonable but not available at the treating hospital? In the neuro-oncology context, this may include image-guided therapies such as laser ablation, specialist interventions, tertiary centre options or relevant clinical trials.

This point has obvious litigation significance. If an option was reasonable, available elsewhere, and potentially suitable for the patient, failure to discuss or refer may create a consent or treatment opportunity issue. The neuroradiologist may not be the sole decision-maker, but where the option is imaging-led or depends on radiological assessment, their role may be central. The MDT may ultimately decide suitability, but the option still has to be put into the decision-making process.

Solicitors should be careful not to overstate this. Not every experimental, unavailable or theoretical treatment creates a duty problem. The relevant question is whether the option was reasonably available, clinically relevant, and sufficiently established or promising to require discussion, referral or MDT consideration. The evidential burden will usually require specialist evidence from clinicians familiar with the treatment landscape at the relevant time.

Practical Questions for Solicitors to Ask

In these cases, the questions sent to the expert should be specific. A vague instruction asking whether there was “radiology negligence” invites a vague answer. The expert should be asked to identify what was visible, whether the protocol was adequate, whether the report was reasonable, whether specialist review or further imaging was indicated, whether the correct baseline was used, and whether the MDT had enough reliable information to make its decision.

The solicitor should also ask the expert to separate breach from hindsight. Would the abnormality have been appreciated without knowledge of the later diagnosis? Was the finding subtle or obvious? Did the clinical history point towards the relevant area? Was the scan technically adequate? Were there accepted limitations in local practice, and did those limitations matter?

On causation, the solicitor should avoid pushing the neuroradiologist beyond their proper role. The neuroradiologist can usually address imaging visibility, interpretation, progression, pseudo-progression, recurrence, radionecrosis and radiological change over time. They cannot usually determine survival outcome, consent causation or the full treatment counterfactual alone. Those questions belong to the wider expert team.

Conclusion

Neuro-oncology imaging cases are high-risk for simplistic legal analysis. A lesion visible in hindsight is not automatically a negligent miss. A scan reported as progression may in fact show pseudo-progression. A benign-sounding report may conceal an unreasonable failure to escalate. A poor outcome may reflect aggressive biology rather than avoidable delay. Equally, local limitations, vague reporting and absent MDT reasoning should not be allowed to obscure genuine breaches.

The strongest solicitor-led analysis starts with the chronology, the imaging protocol, the report, the clinical request, the MDT record and the treatment decision. It then asks what a reasonable radiologist, neuroradiologist or MDT should have done at the time. The case studies show that the most important litigation questions often sit in the gaps between scan acquisition, interpretation, communication and clinical action.

For solicitors, the central lesson is this: do not treat neuro-oncology imaging as a standalone exhibit. Treat it as part of a clinical decision-making chain. The legal case will usually succeed or fail on where that chain broke, whether the break was unreasonable, and whether it made a material difference to the patient's outcome.

Stronger Cases Start with the Right Medical Expert

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