

Management of Spontaneous Retroperitoneal Haemorrhage Emphasises the Need for Nuanced Clinical Decision Making in Interventional Radiology

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Background

After the recent publication titled “Spontaneous Retroperitoneal Haemorrhage: Efficacy of Conservative Management and Embolisation” [1], we read with interest the commentary from Li et al. [2] and Calabrese et al. [3], showcasing and discussing the varying factors that clinical interventional radiologists (IRs) consider when managing spontaneous retroperitoneal haemorrhage (SRH), which is a complex disease.

The Importance of Clinical IR

In our original manuscript, the concluding statements highlight that conservative management of SRH is an effective treatment approach in many patients, especially those therapeutically anticoagulated. We provided data

comparing and supporting conservative and embolisation approaches, emphasising reversal of anticoagulation and resuscitation, rather than offer a specific treatment algorithm or “one-size-fits-all” approach.

In modern practice, patient expectation is that a specialist will provide holistic care and IRs must turn away from the historic “technician” model [4, 5]. As an analogy, surgeons often manage patients non-operatively where appropriate, consider alternative treatments, and refer to other specialty colleagues. It must be the same in IR, and treatments should be evidence-based, cost-effective, and individualized, as emphasised by Li et al. [2].

The efficacy of embolisation has become a central point of discussion, but the broader topic here is clinical decision making [1]. When a referral is received, one must consider all patient aspects. Are they on anticoagulation? Can it be reversed? Have we resuscitated to minimise coagulopathy? What about co-morbidities? What are the goals of care? These are just a few of the relevant considerations before IRs make clinical decisions about an IR management plan, which may involve temporary observation, conservative management, embolisation, and/or referral to another specialty colleague. The principle of non-maleficence reminds us that treatments should be offered only when indicated based on the benefit versus risk for the individual patient.

Educational Components

Both authors discuss clarity of embolisation technique in their replies [2, 3]. This is perhaps more an educational point for readers than a reflection of the initial study, noting

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there was 100% technical success after embolisation [1]. All retrospective studies are limited by documentation bias and the study was not designed to answer a question on technique or appropriateness of different embolic agents. In our experience, gelfoam is usually used in combination by preceding coils, or used alone for nearby arterial territories as a precaution where collateral supply to the bleeding site is suspected.

The all-cause mortality rate of 14.8% in our study is below that of previous published reports [1]. Calabrese et al. presented an excellent all-cause mortality rate of 2.8% in their reply, although this was a single-arm cohort without details on further clinical patient management. Given the small sample sizes in studies to date, larger cohort or pooled analyses would allow regression to the mean. Bleeding-related mortality is complex as expanding haematoma disrupts tissue planes, causing more bleeding sites to occur as it evolves, injuring both arteries *and* veins. This is one reason why reversal and management of bleeding diathesis is a key component of treatment, rather than mechanically focussing on select arterial bleeding sites alone.

Looking Forward

It is greatly encouraging to see the interest of the IR community in management of SRH, a rare condition with high mortality, with excellent contributions by Li et al. and Calabrese et al. to the discussion. Overall, further evidence on holistic management pathways in SRH is needed to decrease mortality and facilitate development of high-level evidence-based guidelines. IRs are a key stakeholder in this as clinicians and should play a central role, rather than passively sitting within a surgically-developed guideline as a technician. Research in IR is thriving and more data on management of SRH would be greatly welcomed.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval For this type of study, formal consent is not required.

Consent for Publication For this type of study, consent for publication is not required.

Informed Consent For this type of study, formal consent is not required.

References

1. Lukies M, Gipson J, Tan SY, Clements W. Spontaneous retroperitoneal haemorrhage: efficacy of conservative management and embolisation. *Cardiovasc Intervent Radiol.* 2023;31:1–8. <https://doi.org/10.1007/s00270-023-03359-4>.
2. Li X, Guan J, Partovi S. Embolization of spontaneous retroperitoneal hemorrhage: an individualized approach is needed. *Cardiovasc Intervent Radiol.* 2023;1:1–2.
3. Calabrese F, Palumbo D, De Cobelli F. A call for standardization in interventional radiology practice: how to deal with spontaneous retroperitoneal haemorrhage? *Cardiovasc Intervent Radiol.* 2023. <https://doi.org/10.1007/s00270-023-03406-0>.
4. Baerlocher MO, Asch MR. The future interventional radiologist: clinician or hired gun? *J Vasc Interv Radiol.* 2004;15(12):1385–90.
5. Clements W. Locoregional challenges for interventional radiology practice: Australia. *Cardiovasc Intervent Radiol.* 2022;45(10):1568–9.

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