

# Advancements in Surgical Consent and the Impact of Digital Health Tools on Vascular Surgery

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## Description

Surgical consent has traditionally been a process defined by a paternalistic model in which the physician made decisions for the patient. However, over recent decades, there has been a significant shift towards patient-centered care, emphasizing Shared Decision-Making (SDM) and mutual respect. This transformation aims to empower patients by ensuring they are well-informed about their treatment options and involved in the decision-making process. In this context, advancements in surgical consent, coupled with the advent of digital health tools, have played a vital role in modernizing patient care, particularly in the field of vascular surgery [1].

Historically, surgical consent was often a mere formality, where patients were asked to sign consent forms without a detailed discussion of the proposed procedure, its risks, benefits and alternatives [2]. This approach was criticized for its lack of patient engagement and insufficient information, which could lead to dissatisfaction and legal disputes. Recognizing these issues, the focus has shifted towards ensuring that consent is truly informed and that patients are active participants in their care. The landmark case of *Montgomery v Lanarkshire Health Board* in March 2015 significantly redefined the standards for informed consent [3]. The ruling emphasized that patients should be provided with information tailored to their individual circumstances and should be made aware of material risks and alternatives relevant to their condition. This shift underscores the importance of detailed and understandable communication in achieving genuine informed consent.

Varicose vein surgeries are most common in vascular surgery. Over the past two decades, the treatment of truncal veins has transitioned from conventional surgical stripping to minimally invasive endo venous techniques [4]. These modern methods include thermal and non-thermal ablation, which are now recommended as primary treatment modalities by leading organizations such as the national institute for health and care excellence, the society for vascular surgery, the american venous forum and the European Society for Vascular Surgery [5]. The rise of digital health technologies offers prospective solutions to enhance the process of obtaining informed consent. Interactive platforms allow patients to study

different aspects of their treatment options, view animations and receive personalized information based on their specific condition. Digital platforms ensure that all patients receive consistent information, reducing the risk of discrepancies and misunderstandings. This helps in standardizing the consent process across different practitioners and settings [6].

## Feasibility and impact of digital tools in vascular surgery

Vascular surgery, which involves complex procedures and often requires patients to make informed decisions about their treatment options, stands to benefit significantly from advancements in digital consent tools. Varicose Vein (VV) surgery, a common day-case procedure in vascular surgery, exemplifies the need for effective consent processes [7]. The management of incompetent truncal veins has progressed from conventional surgical stripping to less invasive endo-venous methods, including both thermal and non-thermal ablation techniques. Thermal methods, including Radio Frequency Ablation (RFA) and endo-venous laser ablation, are effective but carry risks of heat-related complications. Non-thermal methods, like Cyano Acrylate Closure (CAC) and mechano chemical ablation, have their own associated risks, such as thrombophlebitis or allergic reactions. Understanding these options requires clear and comprehensive communication between the patient and the healthcare provider [8].

A recent pilot study tested a digital tool for obtaining consent for varicose vein procedures in a busy surgical environment. The trial sought to evaluate several factors, including participant recruitment, retention rates, acceptability, protocol adherence and the time required for the intervention. Additionally, the study discovered whether the digital health education tool had any impact on patients' knowledge recall, satisfaction and anxiety. Initial findings suggest that digital tools can positively affect early comprehension of the proposed procedure without negatively impacting patient satisfaction or anxiety. However, challenges such as limited access or disability must be addressed to ensure that digital solutions are inclusive and accessible to all patients. Further research is needed to refine these tools and assess their feasibility for diverse patient populations [9].

The evolution of surgical consent towards a more patient-centered approach reflects a broader trend in healthcare to empower patients and improve their engagement in decision-making. Digital health tools offer a transformative opportunity to enhance this process, particularly in complex fields like vascular surgery. By providing clear, consistent and accessible information, these tools can support better patient outcomes, to reduce misunderstandings and enhance the effectiveness and satisfaction of surgical care, improving communication and collaboration is essential. As technology evolves, continuous research and development is important to fully leverage the benefits of digital tools and ensure they meet the needs of all patients [10].

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