

A young adult male with postoperative bleeding following bariatric surgery

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Abstract

Ginger (*Zingiber officinale*) contains anti-inflammatory and antiemetic properties; however, it can disrupt hemostasis. The case report describes a 35-year-old man who suffered significant bleeding following a laparoscopic sleeve gastrectomy, probably due to high preoperative ginger usage for weight loss. A literature analysis

indicates ginger's antiplatelet as well as anticoagulant activities, underlining the danger of perioperative bleeding associated with excessive intake of herbal anticoagulants such as ginger. Surgical patients should avoid taking too much ginger. Clinicians must evaluate herbal-drug interactions. More study is needed to provide safe, evidence-based dose guidelines for ginger.

Key words: ICU, bariatric surgery, complications, bleeding, laparoscopy, ginger.

Introduction

Ginger (*Zingiber officinale*) is a common spice and medicinal herb with potential anti-inflammatory, anti-microbial, and antiemetic effects. However, some recent studies have indicated that ginger influences coagulation and platelet activities. As a result, it might elevate the risk of bleeding, especially in surgical patients or those utilizing anticoagulant medications. This paper reports the case of a 35-

year-old Saudi male who experienced heavy bleeding following laparoscopic sleeve gastrectomy surgery, suggesting that the patient's diet, including a large amount of fresh ginger, may have contributed to the hemorrhage. The case illustrates the fact that it is crucial to be aware of the possible dangers and reactions when herbal supplements, including ginger, are eaten in weight loss programs. Moreover, it is evident that there is a gap in knowledge concerning the mechanisms of ginger's effect on coagulation and the function of platelets; therefore, more studies need to be done in this respect to determine the safety of ginger in the perioperative stage.

Case presentation

A 35-year-old Saudi male patient with obesity (a body weight of around 92 kg and a body mass index of 31 kg/m²) had laparoscopic sleeve gastrectomy (LSG) on March 14, 2024. The next day, the patient complained of acute stomach discomfort and disorientation. Preoperative hemoglobin (Hb) level was 15.6 g/dl, however, it has now plummeted to 10.5 g/dl. The patient was promptly taken to the operating room (OR) for diagnostic laparoscopy. A large hematoma was discovered, irrigation with suction

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was performed, the oozing source was investigated, and homeostasis was achieved. The patient was moved to the intensive care unit (ICU) after surgery. His laboratory results showed white blood cells (WBC) of $11.35 \times 10^3/\mu\text{l}$, Hb of 8.9 g/dl, and platelet count of $184 \times 10^3/\mu\text{l}$, prothrombin time (PT) of 11.4 seconds, and activated partial thromboplastin time (aPTT) of 34.7 seconds.

He was transfused with 5 units of packed red blood cells (PRBCs) and 6 units of fresh frozen plasma (FFP) throughout a two-day stay. Subsequently, his Hb levels then stabilized. Subsequent complete blood count (CBC) showed WBC of $4.88 \times 10^3/\mu\text{l}$, Hb of 9.5 g/dl, and platelet count of $146 \times 10^3/\mu\text{l}$. When the history was taken again in the ICU, the patient stated that he was not using any anticoagulant medication, but he did consume 6 cups of freshly prepared homemade ginger before surgery as part of his weight reduction herbal regimen.

Discussion

The current case report documents a 35-year-old Saudi patient who had a massive hemorrhage after an LSG for obesity. Further inquiry found that the patient had taken large amounts of fresh, handmade ginger - up to 6 cups - as part of a preoperative weight loss program. Excess ginger consumption might have contributed to the patient's postoperative bleeding problem by affecting normal coagulation along with platelet function.

The spice ginger (*Zingiber officinale*) is commonly used in cooking, alternative, and traditional medicine. It has a long history of applications for its potential anti-inflammatory, antiemetic, and antimicrobial properties. (1) Nonetheless, although unlikely and understudied, it should be mentioned that there is emerging clinical and animal research evidence indicating its potential to disrupt hemostasis by platelet inhibition and increased levels of leukocyte activation, probably prolonging clotting times. (1-7) The 2015 systematic review from Marx et al. (1) focused on the inconsistent results of different studies concerning the influence of ginger on platelet aggregation. Among the reports exhibiting the effect was the decline in platelet aggregation; however, other studies had no statistically significant results. The probable cause of this variation could be different study types, ginger preparation, the type and quantity of the ingredients, and the specific population involved. Nevertheless, the study provided a warning against recommending ginger to a high-risk bleeding patient since the platelet function may also be influenced. Additionally, the case reports gave additional cause to worry about ginger's anticoagulant and antiplatelet properties. According to

Krüth et al. (2) a patient treated with the anticoagulant phenprocoumon was diagnosed with over-anticoagulation accompanied by epistaxis, which may have resulted from concurrent ginger consumption. Even that our patient-reported not taking of prescribed anticoagulation has been stated in the present case, the high consumption of ginger seems to have acted as a natural anticoagulant and promoted the risk of increased surgical blood loss. Controlled clinical studies involving ginger and platelet function have also provided mixed findings. Janssen et al. (3) discovered no apparent effect of raw or baked ginger on ex vivo platelet thromboxane production when administering healthy test subjects. Lumb (4) also discovered that dried ginger capsules had no statistical impact on platelet function testing. In contrast, some other research indicated that ginger might be a possible platelet inhibitor, which disrupted platelet activation and aggregation through the inhibition of thromboxane synthesis and other pathways. (5,7)

More importantly, several preclinical studies conducted on animal models revealed ginger's potent anticoagulant and platelet aggregation superimposing activity. For example, Shadrack et al. (5) observed that ginger extract significantly prolonged bleeding times in rats, which may indicate an antiplatelet action. Ajala et al. (6) showed that the methanol extract of ginger rhizome profoundly prolonged in vivo haematoxylin and eosin clotting tests and aPTT, PT, and thrombin time (TT) tests in rats, to a much greater extent than the warfarin. The chemical study showed substances like gingerol and shogaol as possible mediators of ginger's anticoagulant effects, blocking thrombin along with additional coagulation factors. Although this animal data's clinical relevance was not established, they suggest the possibility of ginger increasing bleeding risk in the perioperative period or in combination with other drugs that interfere with hemostasis. An extreme example of this is discussed in this case study, where the patient suffered a massive hemorrhage. Massive consumption of fresh ginger, which contained an abundance of anticoagulant-producing substances, may have acted synergistically to lessen platelet action and coagulation, exacerbated by LSG's disruption of the gastric vasculature.

It is worth noting that most of the published research used standardized ginger extracts and formulations, but this patient consumed considerable amounts of raw ginger drink. The bioavailability and anticoagulant effects of crude ginger formulations are still poorly understood. Furthermore, genetic variants, dietary variables, and comorbidities may all influence a person's reaction to herbal supplements and

risk of bleeding.

Conclusion

In conclusion, while ginger has promised anti-inflammatory as well as cardiometabolic advantages, this case demonstrates its propensity to enhance perioperative bleeding when ingested in excess, most likely via both antiplatelet and anticoagulant pathways. Prior to treatments, surgical patients must be advised not to consume excessive amounts of ginger. Furthermore, while managing patients who use ginger supplements, healthcare practitioners must consider potential herb-drug interactions, par-

ticularly if they are taking anticoagulants or have a bleeding issue. More well-designed clinical trials are required to conclusively define safe ginger dose levels that maintain its favorable benefits while avoiding harmful bleeding consequences. Proper patient education and quality control in the production of ginger products are also required.

Declarations

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