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Case Report

Bleeding risk of dietary supplements: A hidden nightmare for cardiac surgeons



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ABSTRACT

We report a 55-year-old man who underwent off-pump bypass surgery and had diffuse oozing and bruising postoperatively. His hematological profile had been normal preoperatively and he had been off antiplatelets for a week prior to surgery. Postoperatively, a detailed talk revealed that he had been on dietary supplements containing fish oil and garlic – both of which are known to affect platelet function. It behooves the surgeon and anesthetist to screen all patients preoperatively for the possibility of intake of any dietary supplements taken by the patient.

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The use of complementary and alternative medicine has increased tremendously in the last two decades. Besides herbal products and homeopathic medicines, dietary supplements are extremely popular and are available without a doctor's prescription. Their use is generally not volunteered by the patient as he considers them harmless and this gets overlooked in the preoperative assessment.

We report a patient who was on such supplements and had excessive bleeding and subcutaneous bruising after coronary artery bypass grafting (CABG).

1. Case report

A 55-year-old otherwise healthy male patient was referred for CABG. He was an Indian national residing in Canada and had

come to India for his surgery. His coronary angiogram showed severe triple vessel disease with a preserved left ventricular function. He had angina in spite of being on maximal medical therapy. His oral antiplatelets had been stopped a week earlier. His biochemical and blood investigations and routine coagulation profile (bleeding time, clotting time, and prothrombin time) and platelet counts were normal. He underwent a standard triple off-pump CABG via a mid sternotomy using the left internal mammary artery and bilateral radial arteries as conduits. His baseline ACT (activated clotting time) was 110 s. A tendency for diffuse oozing was noted at the time of harvest of the conduits even before heparinization. Heparin 3 mg/kg was given intravenous after harvest of conduits – the ACT after heparin was 400 s. A cell saver was not used. His temperature was maintained during surgery at 35.5 °C with a warming blanket and infusion of fluids at body temperature. After

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Fig. 1 – Postoperative picture showing diffuse bruising.

surgery, he was hemodynamically stable but continued to have excessive drainage (300 ml/h for 3 h) in spite of adequate correction of his ACT with protamine and transfusion of 4 units of fresh frozen plasma. His postoperative platelet count was normal. Platelet function tests were not done. He was re-explored but no surgical bleeder was found. Intraoperatively during the reexploration, 2 units of single donor platelets were transfused and a dramatic reduction of the oozing immediately noted. The chest was closed. His drainage was just 100 ml in the next 24 h. He did well thereafter. Postoperatively, it was noted that he had ecchymosis and bruising in the areas near the surgical incisions – midsternotomy (Fig. 1) and radial artery harvest sites. On detailed questioning, he told that he had been on dietary supplement. These were Tab (Softgel) Arctic Sea three times a day (containing Super Omega-3 Natural Fish oils with Olive oil – Omega 3 Fatty Acids 375 mg {EPA Eicosapentaenoic acid 225 mg + DHA docosahexaenoic acid 150 mg} and Oleic Acid 150 mg per Softgel) and Tab (Softgel) Forever Garlic-Thyme twice a day (containing garlic concentrate 10 mg and Thyme 50 mg per Softgel). Both are supplements from Forever Living Products (Scottsdale, AZ, USA). He had been taking these for the last 3 months. The patient was counseled that he must inform doctors of all medications and supplements before any surgery. A check on the company's website revealed that the products were not drugs but were dietary supplements and available over the counter. A consent and permission from the patient were taken to publish the details and the photograph (Fig. 1).

2. Discussion

Attention from the news media and alternative medicine service providers has caused the usage of alternative medicine by the general US population to increase from 33.8% in 1990 to 42.1% in 1997.¹ The exact incidence in India and other countries is not known.

Some popular herbs can have significant effects on the outcomes of surgery. Fish oils are known to affect platelet aggregation² and fibrinolysis.³ Garlic (*Allium sativum*) is a popular and widely used herb. Garlic is known to inhibit platelet aggregation.^{4,5}

The antiplatelet effect of garlic is manifested as a reduction in platelet adhesion to collagen and fibrinogen as a reduction of platelet aggregation in response to epinephrine⁴ and ATP⁵ and increased nitric oxide synthase activity.⁵

There are no published case reports of unexpected bleeding in cardiac surgery due to the use of dietary supplements.

Despite their “natural” characteristics, dietary supplements have the potential to cause bleeding in patients who undergo surgery. Although we did not perform platelet function tests – in light of the literature narrated above and the immediate response to platelet transfusion, the history of the dietary supplement intake and the preoperative stoppage of antiplatelet agents – it seems that the bleeding in our patient was due to the supplements. An additional column has now been added in our pre-anesthetic chart where it has been made mandatory to ask leading questions about dietary supplements and if being taken, then we make sure to stop them at least 2 weeks before surgery.

3. Conclusion

Our case highlights the dangers of some dietary supplements and emphasizes the importance of detailed questioning of the patient regarding the same.

Conflicts of interest

The authors have none to declare.

Ethical disclosure

Consent and permission from the patient were taken.

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