Individuals presenting with antiphospholipid syndrome (APS) — an autoimmune disease with prothrombotic condition — have a high incidence of recurrent thrombosis. In many cases, anticoagulation therapy cannot be avoided, however, the nature of this therapy remains controversial. This case study describes a female patient with APS associated with recurrent thrombosis and haematoma formation that resulted in multiple skin necrosis. In this case, debridement of necrotic tissue was undertaken and when this did not heal the wound, negative pressure wound therapy was initiated, which was successful in achieving wound closure.

Antiphospholipid syndrome (APS) is an autoimmune disease with prothrombotic condition defined by venous or arterial thrombosis and/or pregnancy morbidity in association with persistent existence of antiphospholipid antibodies [1]. Patients with APS have a high incidence of recurrent thrombosis. Although anticoagulation therapy cannot be avoided in many cases, the nature of this therapy remains controversial [2]. In some patients, anticoagulation cannot be stopped despite active bleeding and can lead to haemorrhage that represents as secondary complications [1]. In this article, the authors present a female patient with APS associated with recurrent thrombosis and haematoma formation who developed multiple skin necrosis.

**Case report**

In September 2014, a 48-year-old female with diabetes was referred to the plastic surgery department for management of skin necrosis with haematoma across multiple areas. She had renal disease of unknown aetiology and then suffered from adrenal insufficiency after a nephrectomy due to renal cell carcinoma. Six years after a kidney transplant, she experienced rejection and following this rejection had been haemodialysed using brachioaxillary artificial fistula. During December 2013, the fistula was obstructed with thrombosis. Following this intervention, permanent catheter insertion was attempted three more times, but all obstructed and became infected.

According to the evaluation, thrombus from the iliac vein to the inferior vena cava was detected. With systemic antibiotic treatment, intravenous heparinisation was initiated and followed by extensive haematoma formation. Almost every catheterisation, including simple venous access, femoral vein access and peritoneal access site for peritoneal dialysis, was filled with haematoma and necrosis of overlying skin [Figure 1]. The patient was referred to the authors' hospital with wound infection and sepsis. During the treatment, antiphospholipid antibodies were detected twice within 2 months and the patient was diagnosed as having antiphospholipid syndrome. Debridement of necrotic tissue was undertaken on the abdomen and thigh [Figure 2].

Following surgical debridement and wound bed preparation, primary closure was attempted, but wound healing could not be achieved and pockets of infection under the skin flap still remained with wound margin dehiscence [Figure 3].

After the removal of the patient's stitches, the authors changed the treatment plan to heal all three wounds by secondary intention. To promote granulation formation, we applied negative pressure wound therapy (NPWT) (CuraVac®, Daewoong Pharmaceutical). NPWT was applied with cyclic mode (-125 mmHg~60 mmHg) on both the thigh and abdominal wounds. It was felt that by using the cyclic mode, the patient would experience less pain, while
the effectiveness of the therapy would be maintained. A moderate amount of serous discharge was removed from the wound.

Even after initiating treatment with NPWT, the authors observed a slow healing rate, which was attributed to the patient’s diabetes and longterm corticosteroid usage. After 2 months of treatment, the abdominal and thigh wounds were closed successfully.

**Discussion**

The most common complication of APS is arterial and/or venous thrombosis. However, bleeding can develop due to microthrombosis, thrombocytopenia and excessive anticoagulation therapy. In patients with severe thrombosis, maintaining the balance between haemorrhage and thrombosis is challenging. However, for those patients who require surgery, postoperative bleeding can lead to subcutaneous haematoma formation and cause wound infection and necrosis.

Although the development of haematoma cannot be prevented in every case, the operation site should be thoroughly inspected so haematoma formation can be detected in its early stages in order to prevent skin necrosis and wound dehiscence. Slow wound healing in APS is under-reported and requires further investigation.

Even in haemodynamically unstable patients, NPWT can be used to promote wound healing. NPWT is primarily used to enhance granulation tissue formation, and as shown in this case, it can also be used to promote wound contraction as shown in the wound closure in this patient.

**Conclusion**

Haematoma following a simple procedure in patients with haemodynamic imbalance can lead to unpredictable and complex wounds and scars. As this case shows, despite complicated underlying comorbidities, careful assessment and the application of basic wound management modalities, such as serial debridement and NPWT, led to a successful outcome.

The wounds associated with APS can cause considerable distress to the patient and others involved in their care. There is a need for further research in this area in order to ensure patients receive prompt and effective treatment.

**References**


**Figure 1.** Skin necrosis and haematoma collection (7 cm x 6 cm) on thigh.

**Figure 2.** Abdominal wound after initial debridement.

**Figure 3.** Primary closure after complete serial surgical debridement of necrotic tissue.

**Figure 4.** Closure of abdominal wound.

**Figure 5.** Closure of thigh wound after 2 months of negative pressure wound therapy.