

## Case report

## Spontaneous bruising in an elderly female

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## ABSTRACT

Bruising in the elderly can be relatively common due to changes in the skin and blood vessels that occur with aging. Several factors such as skin changes, medications, comorbidities contribute to an increased susceptibility to bruising in older individuals. While mild bruising is often a normal part of aging, it's important to pay attention to any unusual or severe bruising, especially if it occurs without apparent cause or is accompanied by other concerning symptoms. We report a case of asymptomatic bruising in an elderly woman with multifactorial aetiology secondary to medications, liver dysfunction and probable occult malignancy.

**Keywords:** Spontaneous; bruising; elderly.

## INTRODUCTION

**B**ruising in the elderly can occur due various causes such as physical trauma, abuse, coagulation disorders, comorbid conditions, medications, dietary supplements or due to changes in microvasculature in senile skin. Haemorrhage or macrovascular disruption, is often secondary to major trauma that leads to alterations in blood volume and commonly presents with pain and shock (1). Although, anamnesis may be difficult for a geriatric patient, a thorough clinical examination and relevant investigations help in proper management.

## Case report

An 89-year-old lady who was admitted under internal medicine for generalised weakness, difficulty in walking and disorientation was referred to the dermatology department for the evaluation of asymptomatic bruising on the legs for the past two weeks. There was no history of trauma or bleeding from any other sites. She was on treatment for diabetes and hypertension and also on low dose aspirin and supplements which were stopped on admission. On examination she was drowsy. There were widespread ecchymotic lesions on both the legs with few eroded areas (Fig.1).



**Fig. 1:** Ecchymotic lesions on bilateral lower limbs

Purpuric and crusted lesions were also noted on the tips of toes on the left foot with bilateral pitting oedema. Few lesions of senile purpura were noted on the forearms. On laboratory work up, peripheral smear showed normocytic normochromic anaemia with relative neutrophilia and thrombocytopenia (73,000/cu mm) with absence of schistocytes. The bleeding, clotting and prothrombin time were within normal limits. The activated partial thromboplastin time (aPTT) was prolonged. Mixing studies partially corrected the aPTT suggesting presence of lupus anticoagulant (Table 1).

## Differential PTT

**Table 1:** Mixing studies with PTT suggesting partial correction

Test	Result	Reference range
APTT (seconds)	57.5	26.1- 36.7
Immediate APTT 1:1 mix (seconds)	37.3	
Incubated APTT 1:1 mix (Seconds)	42.7	

Note: correction of APTT > 50% indicates factor deficiency

Liver function tests were slightly deranged (Serum bilirubin-1.4mg/dl, SGOT-99 U/L and SGPT-58 U/L). Fasting lipid profile was normal. ANA was negative. Ultrasound abdomen revealed enlarged upper para-aortic and periportal lymph nodes, nodular subcutaneous mass with mixed echogenicity in the lower chest. There was no evidence of internal bleeding on evaluation. Evaluation for multiple myeloma was negative. Further tests to rule out internal malignancy were deferred due to advanced age. She was referred to the haematologist but the patient expired while being evaluated for underlying cause.

**DISCUSSION**

Bruise is collection of blood beneath skin due to extravasation from surrounding vessels. It may be secondary to platelet dysfunction, abnormalities in blood vessels or surrounding tissue or coagulation cascade failure. Spontaneous bruising or bleeding is more often a hallmark of thrombocytopenia. Easy bruising in adults may occur due to senile purpura, medications, excess alcohol use, liver cirrhosis, purpura simplex, vitamin C or K deficiency, vasculitis and rarely due to hemophilia or coagulation factor defects or tumors. When a patient presents with spontaneous bruising, bleeding from other sites should be checked for. Spontaneous bleeding due to low platelet count may present as petechiae, epistaxis and gum bleeding. Hemarthrosis may be seen in patients of hemophilia. History regarding intake of certain drugs like antiplatelet, anticoagulants, non-steroidal anti-inflammatory drugs should be asked. Fish oil, ginkgo biloba, ginger, ginseng, and vitamin E can interfere with haemostasis. General condition of patient, hair and nail texture may suggest malnutrition and gum hyperplasia may point towards vitamin C deficiency. History of trauma or abuse may be important for contusions present on unusual sites. History of stress or anxiety followed by appearance of painful edematous skin lesions which may progress to ecchymoses suggests psychogenic purpura or Gardner-Diamond syndrome. Easy bruising has been estimated to occur in 12% to 55% of healthy adults (2). In many cases, the underlying microvascular pathology is unknown. Senile purpura seen commonly in elderly are characterized by 1-4 cm sized macules especially over the extensor aspects of the forearms. The underlying cause of senile purpura is fragile skin due to aging, although secondary causes include solar damage, genetics, and long-term use of corticosteroids (2). The name ‘dermatoporosis’ akin to osteoporosis has been coined to describe the skin changes in the fragile skin of elderly consisting of senile purpura,

skin laceration and bleeding (3). When bruises are larger or more numerous, an underlying hematologic defect should be considered such as mild congenital haemophilia, acquired haemophilia, von Willebrand disease and platelet dysfunction secondary to uraemia and liver cirrhosis. Other causes include pregnancy, malignancy, autoimmune disorders, and certain medications like penicillin, sulfonamides, BCG vaccination. Bleeding is a common problem in cancer patients which can be caused by the cancer itself, local tumor invasion, abnormal tumor vasculature, or tumor regression, systemic effects of the cancer, or anti-cancer treatments (4). Laboratory evaluation of spontaneous bruising in elderly includes basic evaluation of complete blood count and blood smear, along with prothrombin time (PT), partial thromboplastin time (PTT) and thrombin time (TT) (5). Blood cultures, viral studies, and even bone marrow biopsy may be needed (1). If PT or PTT is prolonged then mixing studies may be done which will help differentiate clotting time prolongation due to factor deficiency or presence of inhibitors (heparin, lupus anticoagulants, specific or common factor pathway inhibitors) (2, 6). Liver and kidney function test since they can indirectly affect coagulation. In suspected cases of thrombotic events, D-Dimer and fibrinogen test is done. ANA testing is done to rule out connective tissue disorders. Ultrasonography or CT scan may be done to exclude occult malignancies (Fig.2).

Our patient had no previous bruising history in self or family, thereby ruling out congenital causes of bleeding. She had hypoalbuminemia, hypergammaglobulinemia with absent M band on serum electrophoresis. The liver enzymes were elevated with normal serum urea. aPTT was prolonged with a normal prothrombin time. Mixing studies with normal plasma partially corrected the aPTT suggesting possible lupus anticoagulant (7).

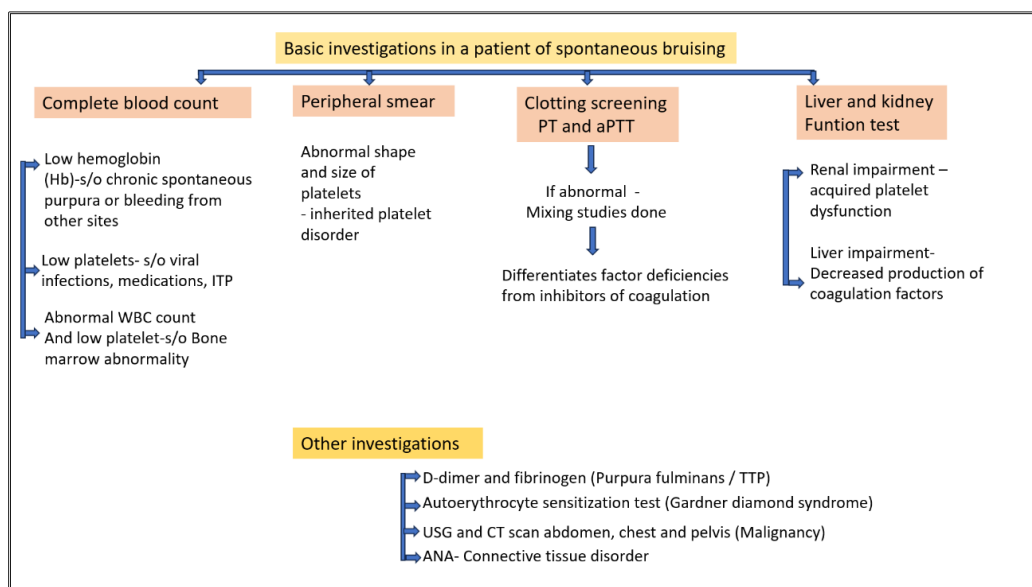


Fig. 2: Approach to patient of spontaneous bruising

Lupus anticoagulant is often associated with recurrent thrombotic events or malignancies (8). However, further testing for lupus anticoagulants and investigations for internal malignancy could not be done due to the deteriorating condition of the patient. In our case the cause of bruising was multifactorial being progressively worsening thrombocytopenia, aspirin intake, hepatic dysfunction and the occult malignancy causing deficiency of clotting factors.

## **CONCLUSION**

Causes of bruising in elderly can be due to various reasons ranging from spontaneous bruising to malignancies. History and clinical examination alone may not detect the exact cause of bruising. Thorough evaluation needs to be done when required and we wanted to highlight the same.

## **CONFLICT OF INTEREST**

The authors declare no conflicts of interest.

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