

Exsanguinating Blunt Breast Trauma: a Report of a Rare Injury

Sule A Z, FMCS, FWACS, FICS, Bada D D, MBBS, FWACS, Nnamonu M I, MBBS, FWACS

Department of Surgery, Jos University Teaching Hospital, Jos, Plateau State, Nigeria

Summary

We report a rare case of blunt trauma in a non-augmented multiparous breast of a young Nigeria woman with exsanguinating haemorrhage who had no clotting disorder. She had no seatbelt on at the time of injury and the car was not fitted with air bag device. Prompt surgical intervention to control haemorrhage from the breast was essential in saving her life. Reasons are advanced why this injury is uncommon.

Key words: Exsanguinating, blunt trauma, breast

Date Accepted for Publication: 18th July 2010

NigerJMed 2010: 332 - 333

Copyright©2010 Nigerian Journal of Medicine

Introduction

The breast or mammary glands are paired, dome-shaped or pendulous structures lying along the anterior chest wall adjacent to the axilla. These modified sweat glands are composed of fatty, glandular and fibrous connective tissue.

The glandular tissue is positioned within layers of superficial and deep fascia. Posterior to the breast and deep fascial plane lie the pectoralis major and minor muscles. Although the breast slides easily over these muscles, the gland itself is firmly attached to the skin by fibrous connective tissue bands known as Cooper's ligaments. These suspensory ligaments extend radially from the deep fascial plane to the skin enclosing fat lobules and providing support to the glandular structures of the breast^{1,3}. The primary arterial blood supply to the breast is from branches of the internal mammary and lateral thoracic arteries and, to a lesser extent, the intercostals arteries. Arterial anastomoses are found beneath the areolar. Venous drainage is through superficial and deep network. Venous anastomosis may occur in a circular pattern around the base of the areolar. Deep veins follow the path of the arteries of drain the breast.

By virtue of the extreme mobility that the breast enjoys trauma with a devastating consequence following blunt trauma is extremely rare. Where such severe injuries do occur, it is usually in women wearing seatbelt or in occupants of car fitted air bags. Predisposing factors often include altered clotting mechanism, arterial

hypertension, platelet deficiency and vessel wall abnormality leading to increased bleeding tendencies^{2,3}. The resultant haemorrhage is usually significant and can endanger life when the breast is viewed against the background its good blood supply.

In this report we present a rare case of accidental blunt injury to the right breast with exsanguinating haemorrhage in a young Banker who was an occupant of the middle seat of a wagon car. Reasons for the rarity of this injury are highlighted.

Case Summary

Mrs. M.F., Hospital Number 42-31-02, us a 42 year old female Banker, a non-hypertensive, who presented to the Accident and Emergency Unit of the Jos University Teaching Hospital with 8 hours history of right sided chest pain and a marked swelling of the right breast following an automobile accident. She was the occupant of the middle seat of a wagon car that skidded off the road and somersaulted twice. She did not have a seatbelt on and the car was not fitted with air bag device. She struck her chest as the car rolls but did not loose consciousness. She had no cough, difficulty in breathing or haemoptysis. Further questioning revealed no evidence of any organ system injury. She was not taking any anticoagulant or anti-platelet drugs.

Examination revealed a conscious, anxious, sweaty young lady who was pale with a blood pressure of 95/50mmHg and a pulse rate of 110 beat per minute.

The right breast was grossly enlarged with patterned abrasion running longitudinally over the anterior aspect of the breast. The breast was tense and non pulsatile; very tender and the skin hyperaemic (Fig I & II). The rest of the chest wall was non-tender on palpation, breast sounds vesicular and the heart beats normal. The respiratory rate was 30 per minute.

Other systems examined were essentially normal. Resuscitation was commenced and urgent plain chest x-ray taken to determine the presence of concomitant intrathoracic visceral injury revealed a goss soft tissue swelling of the right breast. No bony nor evidences of intrathoracic soft tissue injury were seen (Fig III). Her clotting profile was normal. An incision was made over

the most prominent part of the swelling on the lateral side and approximately 1700ml of haemoma evacuated with relieve of pain. The incision was subsequently enlarged and the bleeding vessel secured. The patient was discharged home two weeks later after the wound had healed. Follow up visit 6 months later revealed a supple breast with a hypertrophic linear scar.

Discussion

Severe accidental blunt trauma to the breast with devastating is rare. Literature on the subject blunt breast trauma in non-air bagged car occupants who do not wear seatbelt and whose breast have not been augmented is sparse. It seems there is in fact no documentation of such an injury in the literature. The reasons may not be quite far fetched. The breast is a mobile organ one the anterior chest wall, as such it easily glides away from the line of impact and avoid being crushed. Secondly injuries that are severe enough to crush the surgically non-manipulated breast are often severe enough to cause severe blunt chest trauma³. With the near central anterior location of the breast on the chest wall, the heart and great vessels sited almost directly behind with the sternum and costal cartilages intervening, heart and major vessels are usually fatal with many of such cases failing to reach the hospital alive. The above two reasons may explain the rarity of this injury in the literature amongst women with non-augmented breasts. However, women who have had surgical procedure carried out on their breast fair differently. Any procedure on the breast particularly those involving reconstruction and augmentation are bound to limit the mobility of such breast, render the breast less compressible and project it forward thus predisposing the breast to injury. These speculations are better confirmed in a well controlled study involving large number of patients that will span a long period of time.

Breast reconstruction and augmentation are procedures that are infrequently considered by women in our environment. The percentage of our population using seatbelt is low as the law enforcing use of seatbelt is just being introduction in our country. We also do not sue car fitted with air bag devices. It becomes obvious why blunt breast trauma is uncommon amongst our patients. However, the increasing use of seatbelt to reduce morbidity and mortality following automobile accident, the rising rate of high speed travel and gradually improving level of pre-hospital care, may be reasons we will begin to see this injury more often.

Blunt breast trauma amongst women with breast lesion (*lump*) is an issue that also needs consideration. It is common practice amongst our women to carry on with

lumps in their breast as it is painless. Such lesions predispose the diseased breast to injury with trivial trauma. Our patient presented in shock signifying the seriousness of this condition and the care that needs to be attached to it. The absence of significant intra-thoracic and bony chest wall injury with the magnitude of impact was surprising. Identifying the bleeding and ligating it ahs an essential part of the surgical treatment. Blunt breast trauma in women not taking anticoagulation or antiplatelet and whose clotting profile is normal with significant blood loss is rare. An understanding of its diagnosis and treatment is important.

References

1. Catherin C. Breast Sonography. In: Kawamura D. Abdomen and Superficial structure, 2nd Ed., Philadelphia JB Lippincott, 1997;683-717.
2. Dellen AL, Cowley RA, Hoopes JE. Blunt Chest Trauma: Evaluation of the augmented breast. J. Trauma, 1980;20:982-5.
3. Walker D, Deakikn CD, Smith G. Traumatic Pneumomamuo thorax. Emergency Med. J. 2002; 19:466-467.

