

STUDY OF BRUISES IN RELATION TO AGE AND SEX

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ABSTRACT

BACKGROUND

Bruises also known as contusions are very common mechanical injuries due to blunt force like fall from height, road traffic accidents, hit with hard objects like stone, hammer, etc. A study of pattern of bruises in minor accidents and the pattern of bruises in relation to age and sex of the individuals was done during the period of 6 months from July 2015 to December 2015.

MATERIALS AND METHODS

Data was collected from the police, relatives and photographic evidences from the scene. 120 cases were studied including 40 children, 40 adults and 40 old-aged people and 75 males and 45 females.

RESULTS

Out of them, 95% of children, 65% of adults, 80% of old-aged people showed bruises. 66.67% of males and 86.67% of females showed bruises.

CONCLUSION

A study of pattern of bruises in minor accidents in relation to age and sex of the individuals was done during the period of 6 months from July 2015 to December 2015. Children and elderly and females bruise more easily than the adults and males.

KEYWORDS

Contusion, Children, Adults, Old Aged, Male, Female.

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INTRODUCTION: A contusion is an effusion of blood into the tissues due to the rupture of vessels caused by blunt trauma. They may be present not only on the skin, but also in the internal organs such as lung, heart, brain and muscles. They are caused by blunt force such as fist, stone, stick, bar, whip, boot, etc. The bruise is usually situated in the corium and subcutaneous tissues often in the fat layer. In contusion, there is painful swelling and crushing or tearing of the subcutaneous tissues usually without the destruction of the skin. The extravasated blood is diffusely distributed through the tissue spaces and the margins are blurred. Bruises maybe seen in association with abrasions or lacerations. Injury to a large blood vessel leads to a tumour-like mass called a haematoma. A fresh bruise is tender and slightly raised above the surface of the skin and even a deep-seated bruise show some swelling when compared with the opposite limb or part of the body. A bruise has lighter colour in the centre because extravasated blood is pushed outward by the impact. Blunt trauma results in rupture of blood

vessels and this leads to extravasation of blood into tissues and forms a contusion.¹

- Children bruise more easily because of softer tissues and delicate skin.
- Old persons bruise more easily because of loss of flesh and cardiovascular changes.
- Women bruise more easily than the males because the tissues are more delicate and subcutaneous fat is more.

AIMS AND OBJECTIVES OF THE STUDY:

1. To study the incidence of bruises in relation to age.
2. To study the incidence of bruises in relation to sex.

Inclusion Criteria: Minor Accident cases.

Exclusion Criteria: Major Accident Cases.

MATERIALS AND METHODS: Data were collected from the police, relatives and photographic evidences from the scene. 120 cases were studied including 40 children, 40 adults and 40 old-aged people and 75 males and 45 females during the period of 6 months from July 2015 to December 2015 at Government Medical College, Ananthapuramu.

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**Multiple Contusions over Face
(On Temple, Around Eye, Over Nose)**



**Contusion of Scalp Layers
Underneath the Soft Tissue**

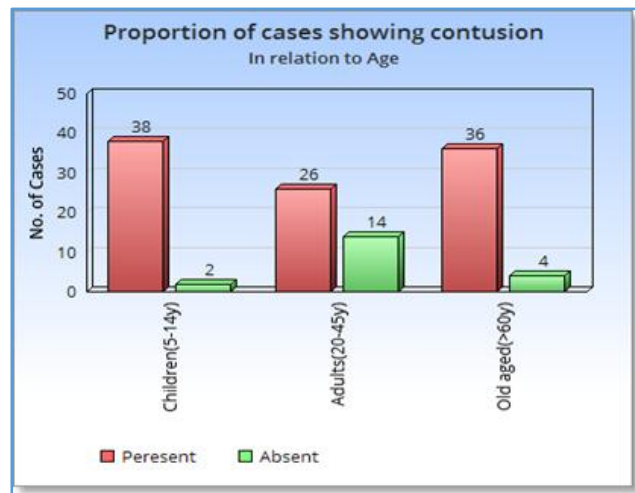
RESULTS:

In relation to Age:

Age	Study Population	Results	Percentage
Children (5-14 years)	40	38	95%
Adults (20-45 years)	40	26	65%
Old Aged (>60 years)	40	36	90%

Table 1: Showing Percentage of Various Groups showing Bruises

Bruises are common in children and elderly people when compared to adults. Because, in children, more amount of soft tissue and delicate skin is present. In elderly, loss of muscles surrounding the vessels and the age-related cardiovascular changes lead to easy rupture of blood vessels and thereby contusions easily. 95% of the children, 65% of the adults, 90% of the old-aged people who met with minor accidents have shown contusions as shown in table 1. Bar graph 1 shows that the children and elderly bruise more easily than the old-aged people.



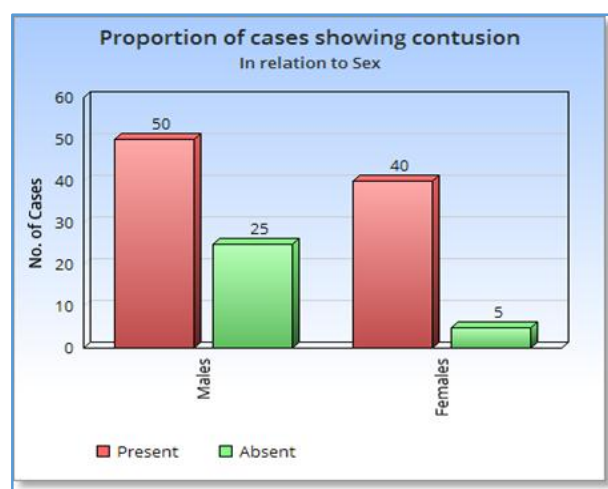
Bar Graph 1: Showing Proportion of Various Groups showing Bruises

In Relation to Sex:

Sex	Study Population	Results	Percentage
Males	75	50	66.67%
Females	45	40	88.89%

Table 2: Showing Proportion of Males and Females showing Bruises

66.67% of the males, 88.89% of the females who met with minor accidents have shown contusions over their bodies as indicated in Table 2. Females have vast subcutaneous tissue and the tissues of the women are more delicate than the males. Hence, the blood vessels of women rupture more easily than that of the males. This bar graph 2 shows that the females bruise more easily than the males.



Bar Graph 2: Showing Proportion of Males and Females showing Bruises

DISCUSSION: Bruises are discoloration of skin caused by leakage of blood into underlying tissues from damaged blood vessels. The greater the force, the more number of blood vessels are damaged and greater the leakage of blood and bigger the bruise.² They are of various types.³ Intradermal,

Subcutaneous, Deep, Pattern, Tram-line, Sixpenny, Horseshoe shaped, Contusion over organs, Gravitating or shifting, Spectacle haematoma. There are many factors involved in producing a contusion.⁴ Age, Sex, Type of tissue involved, Natural diseases, Gravity shifting of blood.

A patient can receive two bruises at the same time and experience different colouration patterns and different speeds of resolution. Colour pattern and speed of resolution varies between individuals and is affected by skin pigmentation and other issues. Bruises can be caused by abnormal bleeding, bleeding diatheses and tissue fragility disorders. The function of normal haemostasis is to maintain blood in a fluid, clot-free state within normal blood vessels and to induce rapid and localised haemostatic clots or plugs at the site of any vascular injury as indicated by Hampton KK.⁵

A study conducted by Connolly et al⁶ showed that haematological studies must therefore always be undertaken in any refuted case of bruising in order to rule out any such condition.

A separate study conducted by O'Hare and Eden,⁷ Sibert⁸ showed that it should be noted that the presence of a coagulation deficit does not exclude an abusive aetiology and evidence of a bleeding disorder is not uncommon in non-accidental injury (in children). A study conducted by Bohnert et al⁹ showed that in some bruises a negative image of the profile of the impacting instrument is produced i.e. a 'patterned injury'. A study conducted by Khair K¹⁰ showed that bruising and bleeding are commonly seen in children and are usually associated with minor injury and trauma. Similar results were seen in the present study also. However, in two groups of children, the bruising maybe more significant than expected: Those with an underlying haemostatic abnormality such as an inherited bleeding disorder or those who have been subjected to Non-Accidental Injury (NAI). When there has been severe blunt force trauma resulting in deep muscle bruising, rhabdomyolysis can develop potentially leading to acute renal failure as represented by Bowley et al.¹¹

CONCLUSION: In the present study, 95% of children, 65% of adults, 80% of old-aged people showed bruises. 66.67% of males and 86.67% of females showed bruises. Children bruise more easily because of softer tissues and delicate skin. Old persons bruise more easily because of loss of flesh and cardiovascular changes. Women bruise more easily than the males because the tissues are more delicate and subcutaneous fat is more. This study clearly shows children and elderly and females bruise more easily than the adults and males.

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