

Is there a change in the epidemiology of nasal fractures in females in the UK?

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Abstract

Objective: To determine whether there is a change in the epidemiology of nasal fractures in females in the UK, and the potential contribution of the 'ladette' culture.

Methods: This paper reports a multi-centre retrospective study. Operating theatre data for all females who underwent manipulation of nasal fractures under anaesthesia between 2002 and 2009 were analysed. In addition, the case notes of all females presenting with nasal fractures over a five-year period (2004–2009) were retrospectively reviewed and the cited cause of the fracture was noted.

Results: From 2002 to 2009, there was an 825 per cent increase in nasal fractures in women aged 13–20 years. Almost one-quarter of all nasal fractures in one centre was attributed to non-domestic violence. The highest incidence of nasal fractures (67 per cent) was amongst white British females.

Conclusion: There is an increasing trend in the number of women sustaining nasal fractures in the UK. The cause may be multi-factorial, but could be partially attributed to a rise in ladette culture. Further research on the role of alcohol consumption in this phenomenon is needed.

Key words: Nasal Bones; Nasal Surgery; Female; Epidemiology; Alcohol Drinking

Introduction

Nasal fractures represent one of the more common acute diagnoses managed by ENT departments.¹ The nose is the most exposed part of the body and the one least protected. In addition, there are significant emotional, functional and cosmetic repercussions associated with nasal trauma.

Local anecdotal data indicated increasing numbers of young women presenting to ENT departments with nasal fractures, in which non-domestic assault was cited as being the most common cause. The word 'ladette' is defined by the Oxford Dictionary of English as 'a young woman who behaves in a boisterous, assertive or crude manner and engages in heavy drinking sessions'.² The related culture of alcohol-fuelled anti-social behaviour is reportedly increasing within the UK: in 2005, 6098 penalty notices for being drunk and disorderly were issued to women, a figure which had increased to 7930 by 2007.³

The aim of this study was to investigate whether a 'rise in ladette culture' had contributed to a change in the epidemiology of nasal fractures occurring in females in the UK over the past decade.

Materials and methods

A retrospective study was performed in three district UK hospitals (Luton and Dunstable Hospital, The Lister Hospital and the Royal United Bath Hospital), serving a catchment population of approximately 1.5 million.

Operating theatre data for all females who attended hospital for manipulation of a nasal fracture under anaesthesia between January 2002 and December 2009 were retrieved. These data, which were obtained from the computer records of all three hospitals, were analysed and stratified according to patient age and year of surgical procedure. Age stratifications comprised 5 groups: less than 13 years, 13–20 years, 21–30 years, 31–50 years and more than 50 years. These age groups were used to most closely reflect the age groups quoted by the media.

Case notes of all female patients attending Luton and Dunstable Hospital for assessment of a nasal fracture over a five-year period, from January 2004 to December 2009, were also reviewed, regardless of whether the patients underwent manipulation of their fracture under anaesthesia or not. Demographic data and the cited cause of the fracture were noted. Case

notes for patients attending before 2004 were not available for review.

Results

From 2002 to 2009, the collected data demonstrated an increase in the number of women presenting with nasal fractures, in all age groups. In total (across all 3 hospitals), 537 females underwent manipulation under anaesthesia between 2002 and 2009, representing approximately one-quarter of all such (manipulation under anaesthesia) procedures performed ($n = 2097$). The greatest increase in incidence was seen in the 13–20 year age group. Indeed, there were only 4 girls who underwent manipulation under anaesthesia across the 3 sites in 2002, whereas the respective number in 2009 had risen to 33, representing an 825 per cent increase (Figure 1). By comparison, the incidence in males had only risen from 47 to 102 during the same time period, a 217 per cent increase.

Analysis of the Luton and Dunstable Hospital case notes ($n = 117$) revealed that the most commonly cited cause of nasal fracture in females was accidents ($n = 57$, 49 per cent), but non-domestic assault was the cause in almost a quarter of cases ($n = 25$, 22 per cent) (Figure 2). The involvement of alcohol in incidents resulting in nasal fractures was poorly recorded. Only 12 patients (10 per cent) admitted to having been consuming alcohol at the time of injury, and over half of the case notes ($n = 65$, 56 per cent) had no record of alcohol consumption. Ninety-two per cent of patients ($n = 107$) underwent manipulation

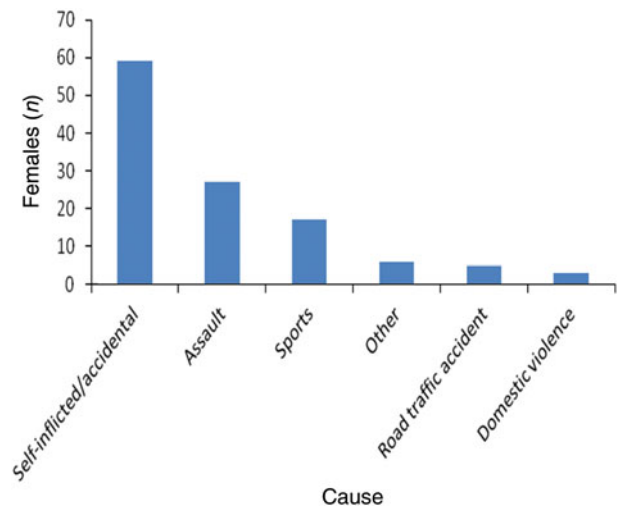


FIG. 2 Causes of nasal fractures in females.

under anaesthesia only, whilst 6 per cent ($n = 7$) required further corrective surgery (4 patients underwent septorhinoplasty and 2 underwent septoplasty); 2 per cent of patients ($n = 3$) were discharged without the need for any intervention. The highest incidence of nasal fractures was amongst white British females ($n = 78$, 67 per cent), followed by British Asian Pakistani females ($n = 17$, 15 per cent) and females of mixed race ($n = 5$, 4 per cent). The most common cause for nasal fracture in the British Asian Pakistani population was accidental injury ($n = 15$, 88 per cent).

Discussion

The results of the present study show a large increase in the number of women requiring manipulation of nasal fractures under anaesthesia, with an 825 per cent increase in the 13–20 year age group from 2002 to 2009. A more detailed inspection of the causes of female nasal injuries is warranted; traditionally, the emphasis has been placed on the causes of respective injuries in men.

Accidental injury was the most common cause of nasal fracture; this was the cause in approximately half of the cases in one centre (Luton and Dunstable Hospital). Indeed, falls and occupational accidents seem to play an increasing role in the epidemiology of nasal injuries in women, as the latter become more exposed to the respective risk factors in a society that considers them stronger and more independent compared with previous decades. Domestic accidental injuries are also frequently reported; a comment on how many of these are truthfully accidental would be purely speculative. Indeed, domestic violence continues to be under-reported by many victims,^{4,5} and was only cited in 2 per cent of the case notes reviewed in the present study.

Sport-related injury was also a common cause of nasal trauma in the present study; an overall increase in nasal fractures amongst young women could also

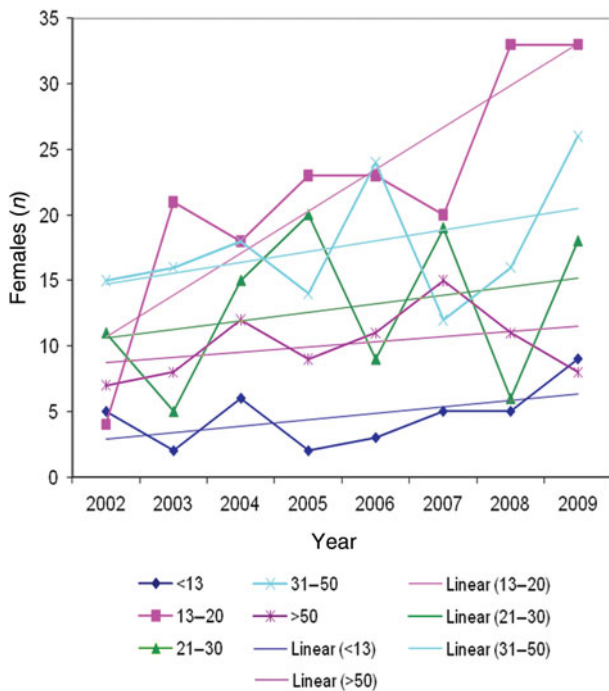


FIG. 1

Cumulative data of females undergoing manipulation of nasal fractures under anaesthesia over an eight-year period across three hospitals in England.

be related to an increased participation in sport. Indeed, Cannon *et al.*, who investigated nasal injuries sustained during sports activities, reported that a substantial proportion of nasal injuries occur in females, reaching approximately 30 per cent of cases in their series.⁶

In almost a quarter of cases in the Luton and Dunstable Hospital, nasal injury was the result of non-domestic violence. This type of violence stems from interpersonal conflicts, and its rates have been associated with the consumption of alcohol.^{7,8} Moreover, at least two UK studies from the past decade showed that alcohol consumption was closely associated with a rise in anti-social behaviour, violence and criminality in young girls.^{9,10} In addition, a significant correlation between cheap, readily-available alcohol and violent injury was found in a study involving 58 accident and emergency departments in 10 distinct economic regions of the UK.¹¹ Therefore, the increased incidence of nasal fractures amongst young women in the present study may, at least in part, be attributed to increasingly violent behaviour amongst young women.

Approximately two-thirds of our population was white British, followed by British Asian Pakistani. This may simply reflect the ethnic demographic that each hospital serves. The Royal United Bath Hospital and The Lister Hospital serve populations which are 88 per cent and 85 per cent white British respectively,¹² whilst Luton and Dunstable Hospital, where all of the British Asian Pakistani patients were treated, serves a population which is 65 per cent white British and 18.3 per cent Asian or Asian British.¹³ As alcohol involvement was poorly documented in most of the case notes, conclusions cannot be drawn about the drinking habits of the different ethnicities. Interestingly, however, all of the notes where alcohol involvement was reported belonged to white British patients. It may not be a coincidence that the increased incidence of nasal fractures amongst young women in our study seemed to predominantly involve white British females.

With respect to the interventions carried out post-fracture, the majority of women (92 per cent) underwent manipulation of the nasal fracture under anaesthesia and nothing further, irrespective of their age. This closely mirrored the management of nasal fracture in the male population.

At a nationwide level, the Hospital Episode Statistics for all admissions to National Health Service hospitals in England show that, overall, the number of people appropriately recorded as having attended hospitals for bony fractures of the nose has risen from 3 patients between 2003 and 2004, to 146 patients between 2008 and 2009 (a time period of 5 years).¹⁴ This increase exceeds (by an extremely large margin) the rise in the number of hospital attendees in general for the same time period (more than 4700 per cent *vs* more than 30 per cent respectively), despite being an underestimation due to a high rate of inappropriately or unrecorded data. The recorded increase in nasal fractures could

therefore have been the result of more violence, rather than part of a general rise in the number of attendees. This large rise mirrors the considerable increase (825 per cent) in females attending with nasal fractures in our data.

Certainly, the interest of the media with regard to alcohol-related anti-social behaviour in young people does not appear to be unjustified. In England, the number of young people seeking the help of specialist substance abuse services rose from 4885 in 2005–2006 to 8227 in 2009–2010; 40 per cent of these young people were aged 12 years or less.¹⁵

In addition to the aforementioned figures, 22 per cent of children aged 11 to 15 years in England reported drinking alcohol at least once in the week in 2005. The prevalence of drinking increased with age: 2 per cent of girls aged 11 years had consumed alcohol in the last week, whilst 45 per cent of girls aged 15 years had done so. The average weekly consumption amongst all 11 to 15 year olds who reported drinking alcohol in the previous week increased from 5.3 units of alcohol in 1990 to 10.4 units in 2000, and has fluctuated around this level since then.¹⁶

Moreover, there were 88 139 women (241 women per day) arrested for violence in 2008, which was a vast increase from the 37 100 arrested in the year 2000.¹⁷ Women and girls were responsible for 13 per cent of all violent attacks between 2007 and 2008 according to the Home Office's British Crime Survey, the equivalent of 281 320 assaults, robberies and muggings.³ The Ministry of Justice figures also show that there has been an increase in the number of women being convicted of drink-driving offences in Britain (12 000 in 2007 compared with 8400 in 1997).¹⁷

- **The culture of alcohol-fuelled female anti-social behaviour ('ladette' culture) has been quoted as being on the rise in the UK**
- **This study supports the notion that violence amongst young women is increasing**
- **From 2002 to 2009, there was an 825 per cent increase in females aged 13–20 years attending for nasal fractures**
- **Patients were predominantly white British, and a significant proportion of injuries were caused by non-domestic violence**
- **Numbers of female nasal fractures could be used to monitor behaviour longitudinally and assess public health policies**

In this context, the ladette as a behavioural model seems to have redefined heavy drinking amongst females as not only acceptable, but in some cases desirable.¹⁸ In addition, the ready availability of palatable drinks that are high in alcohol content (i.e. 'alcopops') in the UK in the past decade, coupled with the so-called

ladette culture, seems to have generated greater public acceptance of heavy drinking in young people, and in particular young women.¹⁹

There may be a number of reasons for a rise in the ladette culture, alcohol being only one of them. Indeed, alcohol is now cheaper, with supermarkets selling discount alcoholic beverages; bars and clubs target young women for free entry, and offer alcoholic drinks at discounted prices; 24-hour licensing laws are now in place; serving measures of alcohol are becoming larger, with a glass of wine (more preferred amongst women) often equating in measure to half a pint (225 ml).²⁰ In addition, whilst women tend not to drink as excessively as men, those who do drink heavily appear to develop problems more rapidly.²¹ As a result, an increase in the number of women indulging in alcohol has occurred, and is increasingly involving women of younger age groups, leading to this perceived increase in anti-social behaviour. However, it has been argued that the concept of the ladette has wider connotations: that it is, rather, a sign, and product, of contemporary development and change, and ladette-related actions are inextricably linked to conditions of late modernity.²²

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