

Original Article

LOCALIZATION AND NUMBER OF DEFLORATION LACERATIONS IN ANNULAR HYMENS

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Summary

The shape of hymens is various, as is the localization of defloration lacerations.

The aim of the present study was to determine the commonest sites of defloration lacerations of annular (ring-shaped) hymens. A total of 3288 forensic medical records of female victims of sexual abuse from different units in Bulgaria have been processed. The site of defloration lacerations was determined in dorsal recumbent position of the patient. From all 3288 women studied, 149 had refused an examination of genitals, and 385 had given birth to a child. In 87.54% of cases (2411), annular hymens were established. In 36.62% of cases (883) there was a single defloration laceration located at the 6 o'clock position in 42.02% of patients. In 550 women (22.82%), 2 lacerations were found out at the 5 and 7 o'clock positions (24.55%). In 4.02% of cases (97) there were three lacerations, 45.36% of them being located at 3, 6 and 9 o'clock positions. In only 8 women 0.33% there were 4 lacerations and in one case (0.04 %) – five lacerations. In 326 patients (13.52%) the hymen was with a wide opening, higher elasticity and allowed a sexual intercourse without being lacerated.

Key words: hymen, defloration laceration hymen, annular hymen

Introduction

The anatomical traits of hymen: shape height and appearance of the free edge, width of the opening, elasticity etc. are most important with regard to forensic medical expertise

The defloration usually occurs with the first sexual intercourse but in numerous women, but the loss of virginity could occur in many other circumstances. In some cultures, the signs of defloration bleeding during the wedding night are announced in public as evidence for the decency and purity of the bride.

Defloration (defloratio, from Latin *de* – detachment, removal and *flos, floris* - blood, youth, virginity) is the impairment of the integrity of female hymen (Gorchev and Lissaev, 2000) [1].

From anatomical point of view, the hymen is connective and elastic tissue mucous fold separating the vaginal entrance from the vagina itself. Its shape is most commonly annular and its opening – centrally located, but variations are also known (McCann et al.1990)[2]. The presence of a recent or old defloration tearing could not be considered as incontestable evidence for sexual intercourse, as hymen could be torn by intrusion of fingers, tools and other sharp objects (Wilson, Swartz,

1972) [3]. Also, there are elastic hymens with wide openings that allow sexual intercourse without laceration. There are also cases requiring medical intervention due to some anatomical traits of the hymen as stated by Shukunami et al., 2000 [4].

The injuries of hymen and its anatomical structure are essential for forensic medicine.

The aim of the present study was to determine the commonest sites of defloration lacerations of annular (ring-shaped) hymens.

Materials and Methods

A total of 3288 forensic medical records of female victims of sexual abuse from different units in Bulgaria have been processed. The forensic medical records and expertise were processed by the documental method and the statistical processing of data – in Microsoft Office Excel.

Results

In 4.53% of all cases (149 women) the examination of genitals was refused. The genital status was described in 95.45% of cases (3139 women). In 12.27% of cases (385) patients had given birth to a child. In 87.54 % of cases (2411), annular hymens were established.

Table 1. Distribution of annular hymens according to the height of the free edge and the width of hymenal lumen, as stated by the forensic medical examination.

	wide hymenal opening	medium hymenal opening	narrow hymenal opening	no data available	Total
high edge	0.99%	2.20%	8.21%	7.55%	18.95%
medium edge	1.99%	3.77%	5.93%	8.67%	20.36%
low edge	3.74%	5.10%	6.72%	12.15%	27.71%
no data available	2.57%	1.50%	5.56%	23.35%	32.98%
Total	9.29%	12.57%	26.42%	51.72%	100%

As seen from Table 1, in more than 50% of examinations, the width of the opening was not described and in more than 30% - the height of the free edge was neither studied. In 8.21% of studied hymens, they were with a high free edge and a narrow opening, whereas in 6.72% – with a low edge and narrow opening.

In 36.62% of cases there was a single defloration laceration, in 22.82% – 2 lacerations; in 4.02% – 3 lacerations, in 0.33% – 4 lacerations and in 0.04% – 5

lacerations were found out. In 13.52% of patients the hymen was with a wide opening, higher elasticity and allowed a sexual intercourse without being lacerated. The hymens of 22.65% were intact.

Figures 1, 2 and 3 present the sites of lacerations of annular hymens with one, two and three lacerations, respectively. In 42.02% of cases, the laceration was at the 6 o'clock position, followed by those at the 7 o'clock position (18.46%) and 5 o'clock position (15.85% - Fig.1).

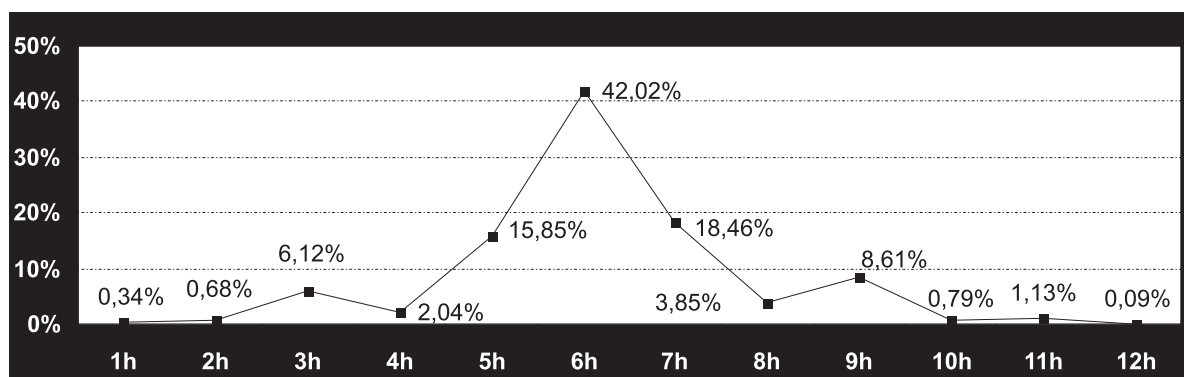


Fig. 1. Site of ring-shaped hymens with one laceration

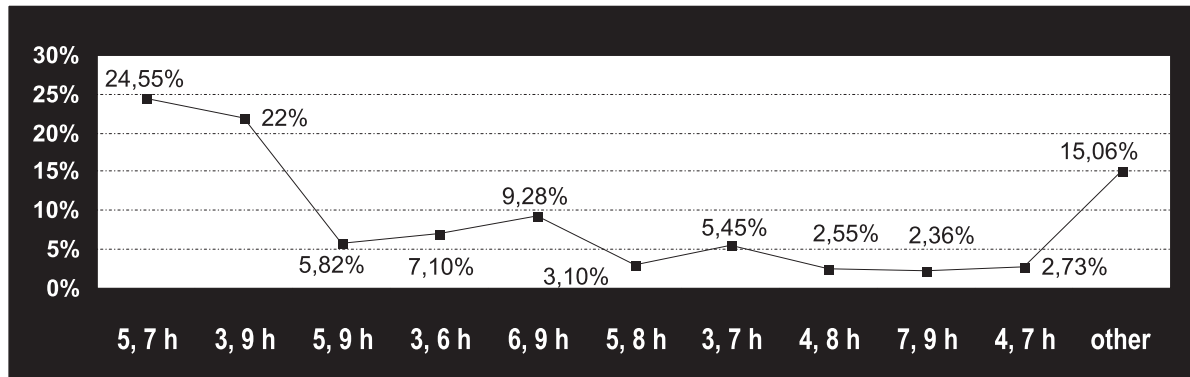


Fig. 2. Sites of ring-shaped hymens with two lacerations

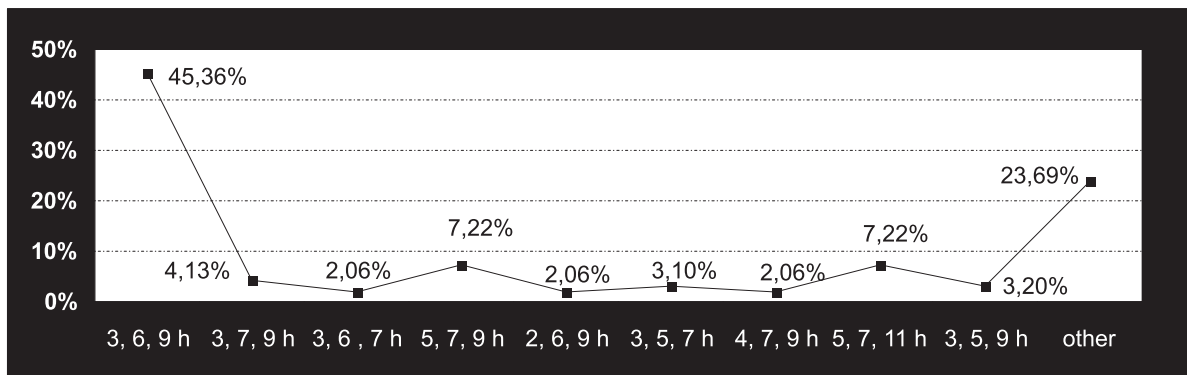


Fig. 3. Sites of ring-shaped hymens with three lacerations

In the present survey, cases with two defloration lacerations were most commonly encountered at 5 and 7 o'clock positions, followed but those at 3 and 9 o'clock positions – 22%. In rape victims with three

lacerations, they were most commonly located at 3, 6 and 9 o'clock positions.

In female patients with four defloration lacerations, they were usually at 3, 5, 6, and 9 o'clock positions (25% of all cases).

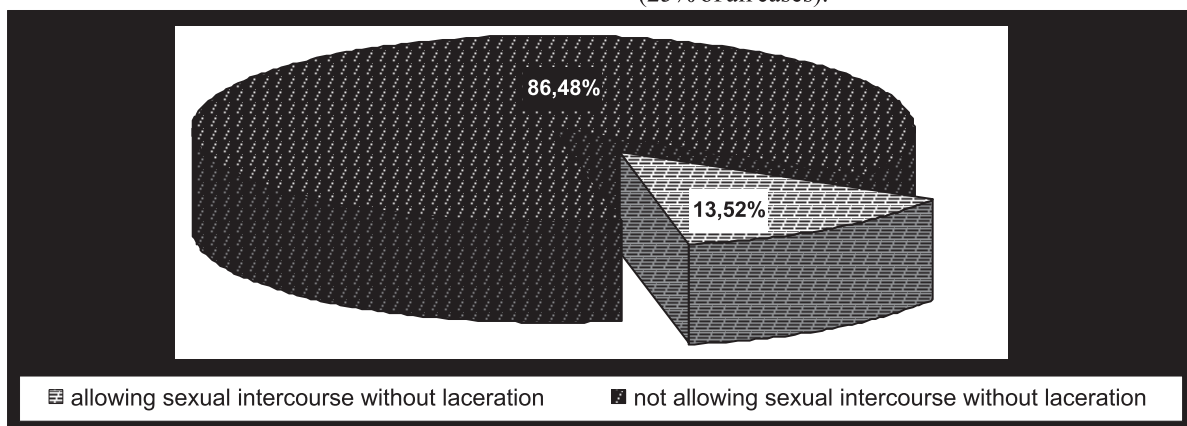


Fig. 4. Distribution of ring-shaped hymens according to the presence or absence of lacerations after sexual intercourse

As seen from Fig. 4, only 13.52% of patients had annular hymens that allowed sexual intercourse without laceration.

Discussion

The results of our investigations have evidenced, that the ring shape of hymens was the commonest –

87.54%. These data are similar to those reported by Radanov and Lissaev, 2004 [5]. Most investigators – Berenson et al., (1992); Boos (1999); Hager et al., (2002); McCann and Voris (1993); Emans et al., (1994) however believe that the perfect ring was not widely prevailing [6,7,8,9,10].

In this study, 36.62% of annular hymens were with only one lacerations, 22.82% - with two, 4.02% – with three and 0.33% – with four lacerations. The data communicated by Radanov et al. 1986⁽¹¹⁾ are comparable.

In 13.52% of all cases, the hymens were with wider openings and higher elasticity and therefore allowed sexual intercourse without lacerations, whereas in 22.65% the hymen was intact.

Our results are the same as compared to those of David (1992) in that the number of lacerations and their sites were in a specific relationship [12]. In our study, the single lacerations were generally in the 6 o'clock position with incidence of 36.62%, in two lacerations – at 5 and 7 o'clock positions in 24.55%. When three lacerations were present they were predominantly at 3, 6 and 9 o'clock positions in 45.36% of women as stated by Gorchev, Lissaev, 2000 [1]. It should be emphasized that laceration sites in 22% of patients were at 3 and 9 o'clock positions and there was not any significant difference as compared to those located at 5 and 7 o'clock positions. Hobs et al., 1995 reported in their study that when a single hymen tearing was present, it was located at 6 o'clock position whereas Ingram et al., (2001) without specifying the shape of the hymen, reported that cases with two tearings were located at the 5 and 7 o'clock positions [13,14]. The women with four lacerations in our study had them at 3, 5, 6 and 9 o'clock positions in 25% of cases. Gardner (1992) considers that the site of defloration depends on a number of factors, such as the intercourse pose, brutality etc. [15].

Conclusions

In rape victims with ring-shaped hymens with lacerations, they were most commonly located as followed at dorsal recumbency of the patient:

1. One laceration at 6 o'clock position in 42.02% of cases.
2. Two lacerations at 5 and 7 o'clock positions in 24.55% of cases.
3. Three lacerations at 3, 6 and 9 o'clock positions in 45.36% of cases.
4. Four lacerations at 3, 5, 6 and 9 o'clock positions in 25% of cases.

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