



Study of Vaginal Smears For Spermatozoa In Alleged Cases Of Rape: Hospital Based Study

¹Dr. Raj Kumar Prasad, ²Dr. Amrisha Parul, ³Dr. Debolina Banerjee, ⁴Dr. Bejoy Chand Banerjee

¹Associate Professor, ⁴Professor,

^{1,4}Department of Pathology, SNM Medical College, Dhanbad, Jharkhand

²Bandhdih, Jainamore, Bokaro, Jharkhand

³Qr no.-B1, ISM campus, Dhanbad, Jharkhand

***Corresponding Author:**

Dr. Raj Kumar Prasad

Associate Professor, Pathology Department, SNM Medical College, Dhanbad, Jharkhand

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Abstract

Objective: To know the prevalence of alleged cases of rape with respect to age & religion.

Methods: This study was conducted in SNM Medical College, Dhanbad from July, 18 to December, 19. Samples of vaginal smears were stained & then examined under microscope for spermatozoa.

Results: Out of 313 vaginal smears of alleged cases of rape, the most common age group affected was 16 to 20 years (124/39.61%) followed by 21 to 25 years (70/22.36%) while the least common age group affected was 5 years & below (4/1.27%) followed by above 40 years (5/1.59%). Hindu female cases (272/86.90%) were more common than Muslim female cases (41/13.09%). No alleged cases of rape were found to have spermatozoa in their vaginal smears.

Conclusion: Forensic labs must be updated with latest techniques & equipment for elaborate analysis of alleged sexual assault cases.

Keywords: vaginal smear, rape, spermatozoa.

Introduction

Rape is a sexual assault usually involving sexual intercourse or other forms of sexual penetration carried out against a person without that person's consent. This is not a medical diagnosis but a legally well defined crime. There is generally victim & accused without any eye-witness. In spite of stringent measures, the incidence of rape continues to rise unabated all over the world including India. Prosecution is based on physical & biological evidence left at scene of crime spot or on body of victim. It is often required to examine the vaginal smears of victim or seminal stains on belongings of victim as well as accused for presence of spermatozoa & others related substances.

Microscopic detection of spermatozoa in vaginal smears is usually used for confirmation of semen as a gold standard. However it is not always possible to demonstrate the spermatozoa with certainty due to time-lapse between occurrence of crime & laboratory examination. Oligospermic/aspermic semen & sterilization for family planning may also be responsible. There is also a false accusation of rape ie reporting of a rape where no rapes has occurred. Corroborative medical evidence & analysis of trace evidence play definite role in making the conclusion more easy & possible for investigation of alleged rapes.

Material & Methods

Vaginal smears of alleged rapes with requisition for detection of spermatozoa were received in pathology

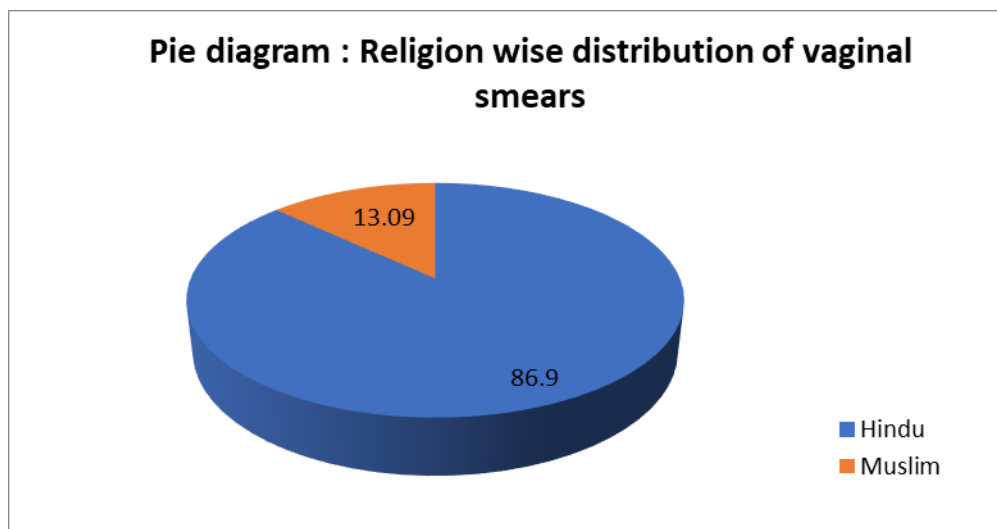
unit of Obstetric & Gynaecology Department,SNM Medical College,Dhanbad,Jharkhand. This was a retrospective study of total 313 alleged rapes for a duration of one & half years from july,2018 to December,2019. Received vaginal smears were stained with Leishman’s stain & or Giemsa stain.Then spermatozoa were examined for its presence or absence under high power using optical compound microscope.

In a total of 313 vaginal smears studied,maximum numbers were in age group of 16 to 20 years (124/39.61%)followed by age group of 21 to 25 years(70/22.36%) & 11 to 15 years (39/12.46%) & minimum numbers were in age group of 5years & below(4/1.27%)followed by age group of above 40 years(5/1.59%) & 36 to 40 years(17/3.19%).Thus girls just before & during the age of marriage were more prone to crime of rape.

Result

Table : Age wise distribution of vaginal smears

Age group	No. of cases	Percentage
0-5 yrs	04	1.27
6-10 yrs	18	5.75
11-15 yrs	39	12.46
16-20 yrs	124	39.61
21-25 yrs	70	22.36
26-30 yrs	26	8.30
31-35 yrs	17	5.43
36-40 yrs	17	3.19
>40 yrs	05	1.59
Total	313	99.96



The lowest age of alleged rape victim was a child girl of 2 years old while the oldest female allegedly rape was a 60 years old. So no age seemed to be exempt to the crime of alleged rape.

With religion wise distribution of vaginal smears, the Hindus had maximum number (272/86.90%) in comparison to Muslims(41/13.09%).

However no cases of alleged rape were found with positivity of vaginal smears for the presence of spermatozoa.

Discussion

Typically, rape is an expression of aggression, anger, or need of power. Extragenital or genital injuries occur in majority of rapes of females which has considerable forensic relevance. According to 2019 annual report of National Crime Records Bureau 32,033 rape cases were registered across the country, or an average of 88 cases daily. The share of victims who were minors or below 18-the legal age of consent-stood at 15.4 %. Nagaland(0.8),TamilNadu(1.0) & Bihar(1.3) had the lowest rape rates among the states of India, while Rajasthan(15.9)& Uttar Pradesh had the highest rape rates. In Jharkhand, total rape cases registered as of 2019 were 1,416 with adults(18 years & above)1,228 & minor(below 18 years)188 with 7.7% rape rate. However most rapes go unreported because the rape victims fear retaliation & humiliation both in India & throughout the world.

The rate of reporting, prosecution & convicting for rape varies between jurisdiction. Rape by strangers is

usually less common than rape by people the victim knows.

Conclusion

Rape is a crime and not medical diagnosis. Doctors entrusted with the responsibility of examining victims do not have the right to conclude whether an individual had been raped or not.

References

1. Willott GM, Alard JE. Spermatozoa-their persistence after sexual intercourse. *Forensic Sci Int.* 1982;19(2):135-54.
2. Janisch S, Meyer H, Germerott T, Albrecht UV, Schulz Y. Analysis of clinical forensic examination reports on sexual assault. *Int J Legal Med.* 2010;124(3):227-35.
3. Culhane JF, Nyirjesy P, McCollum K, Casabellata G, Di Santolo M. Evaluation of semen detection in vaginal secretions: comparison of four methods. *Am J Report Immunol.* 2008;60(3):274-81.
4. Astrup BS, Thomsen JL, Lauritsen J. Detection of spermatozoa following consensual sexual intercourse. *Forensic Sci Int.* 2012;221(1-3):137-41.
5. Green W SPJG(2003) Sexual assault & semen persistence. *Encyclopedia of Forensic Medicine* 1016-18.
6. President DNA Initiative(2013) A national protocol for sexual assault medical forensic examination: adult/adolescents. September 2004.