Original Article

Does circumcision influence recurrences in herpes genitalis?

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DOI: 10.4103/0378-6323.57717
PMID: 19915236

ABSTRACT

Background and Aims: The effect of therapeutic circumcision in men for preventing recurrences of herpes genitalis remains largely unelucidated despite its well documented albeit conflicting role in reducing the risk of acquiring sexually transmitted infections, including genital herpes. **Methods:** Twenty volunteer adult males with a history of recurrent herpes genitalis were included in the study after informed consent and circumcision was carried out. Twenty more adult males having recurrent herpes genitalis and registered in the clinic during the same period were selected as controls. All patients and controls were followed-up for recurrences of herpes genitalis. **Results and Conclusions:** Six patients and six controls did not follow-up. Seven patients reported no recurrences during 3–18 years, seven patients had two to six recurrences during 11–27 years of postcircumcision follow-up, 0.0080 (average) recurrences per person per year as compared with 0.20 (average) recurrences per person per year recorded before the circumcision. Two patients had first recurrence 11 years after the circumcision. In comparison, 14 controls had 0.17 (average) recurrences per person per year, comparable with the number of recurrences in uncircumcised patients, and frequently at shorter intervals. Despite being a small study, the circumcision appears to reduce the number of recurrences on an average and evidently prolongs the disease-free period in between two recurrences.

Key words: Genital herpes, Herpes simplex virus, Recurrent herpes genitalis, Sexually transmitted infections

INTRODUCTION

Both herpes simplex virus (HSV) types-1 and -2 have been implicated to cause genital herpes, but it is primarily due to HSV-2 in majority. Clinical experience over the years has shown that acyclovir, famciclovir or valacyclovir are effective in reducing both the duration and the severity of the clinical episodes. However, the characteristic feature of human herpes virus is its ability to cause recurrent disease. No intervention, including early initiation of antiviral therapy, prevents the establishment of latent infection and subsequent recurrences leading to major psychosocial morbidity, particularly in sexually active young and adolescents. Continuous or intermittent oral administration of acyclovir, famcyclovir or valacyclovir recommended for the long-term suppression of the occurrence of symptomatic recurrent disease[1-5] is exorbitantly expensive and unaffordable for most patients in resource-poor countries. Although circumcised males have been clearly shown to have a low risk to contract sexually transmitted infections (STIs), including genital herpes infection,[6] its role as a preventive measure in STI transmission in recent reviews appears conflicting and inconclusive.[7,8] Moreover, the location of ulcers may also affect the role of circumcision on infection/recurrences. The effect of therapeutic circumcision in men for preventing recurrences of herpes genitalis also remains largely unelucidated.

In this study, we present our observations in the context of the influence of therapeutic circumcision on recurrences in herpes genitalis with an idea of documentation as we did not find any similar study in the literature. The study was carried out in the

How to cite this article: Jerath VP, Mahajan VK. Does circumcision influence recurrences in herpes genitalis?. Indian J Dermatol Venereol Leprol 2009;75:575-8.
Received: March, 2009. **Accepted:** April, 2009. **Source of Support:** Nil. **Conflict of Interest:** None declared.

early 1980s when antiviral drugs for HSV were either unavailable or unaffordable in resource-poor countries.

METHODS

Twenty adult males with a history of recurrent herpes genitalis involving prepuce were included in the study after informed consent. Twenty more adult males also having preputial recurrent herpes genitalis and registered in the clinic during the same period were selected as controls. For all eligible patients and controls, relevant clinical history with special emphasis on duration and frequency of recurrences was noted. They were subjected to detailed general physical/systemic examination and screened for the presence of other STIs. The individuals having active herpetic lesions were excluded or enrolled once their lesions resolved completely. The individuals having herpes lesions, past or present, over the penile shaft and/or the glans penis were also excluded. Circumcision was carried out in 20 volunteer patients. The foreskin was excised surgically under local anesthesia. They remained under supervision till healing of the surgical wound. All patients and controls were evaluated once a month for recurrences or whenever recurrence of herpes lesions was suspected during the first year. Subsequently, the patients were advised to report whenever they observed recurrence of the disease.

RESULTS

Six patients and six controls did not follow-up after the first visit itself and data of only 14 patients and 14 controls were available for analysis [Table 1]. The duration of genital herpes was 1–3 years (average 1.5 years) and the number of recurrences varied from three to four episodes in nine patients, five to six episodes in three patients and seven to eight episodes in two patients each during 1, 2 and 3 years (0.20 recurrences per person per year) before circumcision, respectively. Seven (50%) patients did not report recurrences during the postcircumcision follow-up period of 3–18 (average 10.75) years. Seven other (50%) patients reported two to six recurrences during 12–27 years of postcircumcision follow-up. Overall, 0.0080 (average) recurrences per person per year were recorded, with two of these seven patients had the first recurrence 11 years after the circumcision. All 14 controls had recurrences, the first recurrence occurred 2–15 months after the primary episode, once in 4 and 5 months in four patients each and after 2, 9 and 15 months in one patient each, respectively. Only one patient had first recurrence 7 months after the primary episode. During the available follow-up period of 15 months to 4 years, there were 0.17 recurrences per person per year and their number varied between 3 and 10, with an interval of 2–10 months in between two recurrences.

DISCUSSION

The preventive effect of therapeutic circumcision in men in recurrences of herpes genitalis or its clinical course remains unstudied. In this study, there were 0.20 recurrences per person per year before circumcision and their number varied from three to four episodes in nine patients, five to six episodes in three patients and seven to eight episodes in two patients each during 1, 2 and 3 years, respectively. Interestingly, 50% of the patients did not report recurrences during the postcircumcision follow-up period of 3–18 (average 10.75) years while the remaining 50% of the patients had two to six recurrences (average 0.0080 recurrences per person per year) during 12–27 years of postcircumcision follow-up. Two patients had first recurrence 11 years after the circumcision. In comparison, all the 14 controls reported more frequent recurrences, almost comparable to those in uncircumcised patients, i.e. 0.17 and 0.20 (average) recurrences per person per year, respectively. The first recurrence was as early as 2 months after the primary episode and the interval in between the recurrences was even shorter.

Despite being a small study, the circumcision appears not only to reduce the number of recurrences but also evidently prolongs the disease-free period in between two recurrences. It appears possible, especially in view of the fact that HSV replicates largely in epithelial cells, infects Langerhans and other dendritic cells and stimulates as well as inhibits their immune function.[9] Circumcision will leave a smaller surface area and fewer of these cells to respond to HSV. However, from these, it cannot be absolutely inferred whether circumcision will offer any real benefit in preventing recurrences in herpes genitalis, particularly when involving penile shaft or glans penis, and in view of the fact that the average recurrence rate is known to decrease overtime by around 0.8 outbreaks per year, every year, no matter how high the initial outbreak rate was.[10] Further, approximately 25% of the patients report more recurrences in year 5 than year 1, suggesting substantial individual differences in the recurrence rates.[11] Large, well-controlled clinical studies will

Table 1: Recurrences of genital herpes in patients and controls during the follow-up period

Case no.	Duration of genital herpes before circumcision	Number of recurrences of genital herpes lesions		Remarks
		Before circumcision (year of circumcision)	After circumcision	
Patients (n = 20)				
1	1 year	4 in 1 year (1980)	4 during 27-year follow-up	
2	1 year	3 in 1 year (1980)	6 during 25-year follow-up	
3	1 year	4 in 1 year (1980)	5 during 24-year follow-up	First recurrence occurred 5 years after circumcision. The others were also as widely spaced
4	3 years	8 in 3 years (1981)	2 during 20-year follow-up	First recurrence occurred 8 years after circumcision. The others were also as widely spaced
5	1 year	3 in 1 year (1981)	2 during 19-year follow-up	First recurrence occurred 10 years after circumcision. The others were also as widely spaced
6	1 year	3 in 1 year (1981)	None during 18-year follow-up	_
7	1 year	3 in 1 year (1981)	None during 18-year follow-up	_
8	1 year	3 in 1 year (1981)	None during 15-year follow-up	First recurrence occurred 11 years after circumcision. The others were also as widely spaced
9	2 years	5 in 2 years (1982)	3 during 12-year follow-up	First recurrence occurred 11 years after circumcision. The others were also as widely spaced
10	3 years	7 in 3 years (1982)	2 during 11-year follow-up	_
11	2 years	6 in 2 years (1982)	None during 8-year follow-up	_
12	2 years	6 in 2 years (1983)	None during 8-year follow-up	_
13	1 year	3 in 1 year (1983)	None during 5-year follow-up	_
14	1 year	3 in 1 year (1983)	None during 3-year follow-up	–
Controls (n = 20)				
1	2 years 8 months	6 in 2 years and 8 months of follow-up		These recurrences occurred with a gap of 3–7 months
2	3 years	7 in 3 years of follow-up		These recurrences occurred with a gap of 2–10 months
3	3 years	9 in 3 years of follow-up		These recurrences occurred with a gap 3–5 months
4	1 year 3 months	4 in 1 year and 3 months of follow-up		These recurrences occurred with a gap 4–6 months
5	1 year 3 months	3 in 1 year and 3 months of follow-up		These recurrences occurred with a gap of 5–6 months
6	2 years 11 months	4 in 2 years and 11 months of follow-up		These recurrences occurred with a gap of 6–10 months
7	1 year 8 months	4 in 1 year and 8 months of follow-up		These recurrences occurred with a gap 4–7 months
8	3 years 3 months	8 in 3 years and 3 months of follow-up		These recurrences occurred with a gap of 3–7 months
9	3 years 10 months	10 in 3 years and 10 months of follow-up		These recurrences occurred with a gap of 3–11 months
10	2 years 6 months	6 in 2 years and 6 months of follow-up		These recurrences occurred with a gap of 4–10 months
11	2 years 10 months	5 in 2 years and 10 months of follow-up		These recurrences occurred with a gap of 5–7 months
12	2 years 8 months	4 in 2 years and 8 months of follow-up		These recurrences occurred with a gap of 4–7 months
13	2 years	5 in 2 years of follow-up		These recurrences occurred with a gap of 4–5 months
14	2 years 10 months	4 in 2 years and 10 months of follow-up		These recurrences occurred with a gap of 5–17 months

(1) There were on average 0.20 recurrences per person per year before circumcision in the patients. (2) There were on average 0.0080 recurrences per person per year after circumcision in the patients. (3) There were on average 0.17 recurrences per person per year in the controls.

perhaps be in order before deliberating upon its real benefits, if any, in reducing the recurrences.

We make no attempt to explain the mechanism involved in the role of circumcision in preventing recurrences as it will at best be speculative for the established fact that on primary infection, HSV establishes latent infection in the sensory neurons that persists for life and the reactivation of these latent viral genomes with virion formation is largely responsible for the recurrent disease. The role of the prepuce in herpes genitalis recurrences thus appears relatively minor and circumcision may not be a first-line choice in these patients, especially in this era of pharmacotherapy. It needs to be emphasized that recommended suppressive therapy using acyclovir, famciclovir or valacyclovir is important for reducing the risk of recurrences as well as transmission of genital herpes that occurs mostly in the context of asymptomatic shedding of the virus. Intermittent treatment schedules too have become affordable.[3]

LIMITATIONS

As the study was commenced in the early 1980s, the diagnosis was mainly clinical as facility for culture and HSV typing was unavailable/unaffordable. It was also assumed that all cases were due to HSV-2, which is important in view of the fact that HSV-1 tends to recur less frequently than HSV-2. Small sample size, large dropouts and reduced length of follow-up for controls are some of the other limitations.

ACKNOWLEDGMENTS

Dr. N. L. Sharma, Prof. of Dermatology, Venereology and Leprosy, Indira Gandhi Medical College, Shimla (India) and Dr. V. K. Sharma, Prof. of Dermatology, Venereology and Leprosy, All India Institute of Medical Sciences, New Delhi (India), provided their valuable and erudite help and guidance. The help extended by our colleagues from surgery is also gratefully acknowledged.

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