AN ETIOLOGY OF ANAL FISTULA IN INFANTS

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ABSTRACT

Anal fistula in infants is considered to be not due to diaper dermatitis but it is developed in the process: hyperfunction of sebaceous glands induced by either excessive secretion of sex hormones (maternal hormones and hormones in the baby) or disorders related to hormones—acne vulgaris—fistula formation.

Because the incidence of infantile anal fistula is very high in patients below the age of one month, the author recommends to put this fistula in the category of diseases of newborn babies, and to call it "fistula ani neonatorum".

It is presumed that the fistula-in-ano which is usually observed in adult is also due to the abnormal development of pilo-sebaceous system or of free sebaceous glands (Fordyce's disease) of the anus. That is, the anal fistula in adults is pathogenically the same as that in infants. In addition, it is necessary to reconsider the theory in which cryptogland infection is regarded as the cause of anal fistula.

Until recently fistula in infants has not been paid much attention. However, with its increased incidence in recent years, it is getting important. The author, a practitioner specializing in both dermatology and anal surgery who is supposed to be rare, has had chances to examine the anus, and has taken an interest in the anal fistula in infants, especially in its causes.

An etiology of the anal fistula in infants has not been clarified basically while some people have the assumption of diaper dermatitis. This paper presents evidences to draw the author's conclusion to make some contribution to the fistula-etiology and controvert the hypothesis of diaper dermatitis.

First, the incidence of anal fistula including periproctic abscess by age, from birth to childhood, was examined. In 1974, doctors in the Pediatric Surgery Section of the Second Department of Surgery, Tokyo University School of Medicine, reported that 70% of 132 children with anal fistula consisted of infants under one year, especially in the early period of a few months. Two years ago, in
the symposium of infantile anal fistula, doctors in the First Department of Surgery of Kyoto Prefectural Medical College and in the Surgical Department of Tokyo Medical College and others also reported that the incidence in the patients under one year old was very high, and doctors in the Department of Surgery (Prof. Wakizaka) of Kurume University School of Medicine pointed out that most of the 28 patients with infantile anal fistula were found when they were younger than one month old. The author, with great confidence has recommended to put this fistula in the category of diseases of newborn babies, and to call it "fistula ani neonatorum".

Second, as for the sex, Arakawa presented the striking report, in the above mentioned symposium, that all of the 263 patients with infantile anal fistula were boys. Although the author observes some girls have relatively delayed anal fistula, the extremely high incidence of this disease in boys arouses a world interest.

Third, this disease tends to increase recently, and it is widely accepted that it frequently occurs bilaterally, especially in III and IX areas of anus.

Can the above-mentioned facts on this disease be fully explained by the hypothesis of diaper dermatitis, or of external stimulations? The answer is definitely "no". Even the conception which attributes it to perineal dermatitis often observed in newborn babies is not proper, although the findings are superficially similar to diaper dermatitis; properly, this is a semiphysiological lesion, caused by chemical burn or excoriation due to stool, and it soon cures spontaneously without any infection.

The author considered that the primary cause of this fistula may be abnormal hyperfunction of periproctic sebaceous gland mainly due to the effects of maternal sex (androgenic) hormones or (rather and) that of the baby itself. The sebaceous gland secretion in newborn infants physiologically increases for the defence against the air. In dermal pathology, the importance of the role of hormones mentioned above is clear. Further, no one can deny the possibility of oversecretion phenomena in the so-called seborrhoic zone. It is therefore concluded that similar acne-like symptoms (acne neonatorum) develop around the anus as in the face, and the same process: comedo—acne vulgaris—(pustule formation) is observed. Incidentally, it has already been confirmed that the newborns show a strong activity of the testis.

The following table shows the cases the author experienced during the last year.

Next, the cause of usual anal fistula in adult is considered. The behaviour of sebaceous glands in the joining or transition area of cutis and tunica mucosa is various. As for the movements and conditions of free sebaceous glands, it is said that the incidence of Fordyce spots (Fordycescher Zustand) in adult is ap-
proximately 80%. By a careful examination, dotted yellowish-white small tumors will be clinically often observed in the rectum or in the anal fossa. Histologically, those are mainly due to the enlargement or proliferation of sebaceous glands, and rarely the ducts or secretion are observed.

In the puberty, by the addition of various factors to the activities or the unstability of sex hormones, the process: abnormal development of sebaceous glands to the deeper portion—inflammation—fistulation can be presumed. On the other hand, in the skin within the anus, giant sebaceous glands attached to downy hairs are observed, which leads us expect the occurrence of acne vulgaris in the anus.

Finally, it may be concluded that the development mechanisms of anal fistula in adult are quite the same as those in infant, i.e., hormone (androgen)—sebaceous gland—symptoms (fistula formation) process, although there are differences in first occurrence positions and findings between them. This hypothesis not only urges reconsideration of the previous conceptions which regarded these anal fistulas as different ones, but also explains a greater incidence in males and two peaks (small and large) shown in the incidence curve by age. Moreover, it will present the problems on the role of the anal cryptogland, as the cause of anal fistula, and the complicated classification and its description method of the disease.

"A fistula-in-ano is the final result of an anorectal abscess, and probably the latter has an initial cause in pilo-sebaceous system".
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