

NEISSERIA MENINGITIDIS IN UROGENITAL INFECTION

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Summary

One case of genital *N. meningitidis* infection in a female is reported. *N. gonorrhoeae* infection was confirmed in 42 females during the process of screening of 410 unsuspected females at an obstetric and gynaecology out-patient clinic. A single case turned out to be a possible case of primary genital infection due to *N. meningitidis*. This possibility, though very rare, should be kept in mind by the clinicians to avoid misdiagnosis of such cases as gonorrhoea.

Isolation of *Neisseria meningitidis* from female genitalia is a rare phenomenon. Implantation of *N. Meningitidis* into cervix during sexual intercourse has been demonstrated by Keys et al¹. They obtained positive blood culture for *N. Meningitidis* in some patients and postulated a possible dissemination from cervical location.

Primary meningococcal involvement of genito urinary tract in seven patients (six males and one female) was reported by Carpenter and Charles². They, however, did not record any systemic manifestation of meningococcaemia in them. Murray³ reported occurrence of meningococcal infection in male urogenital tract and cautioned against confusion with *N. gonorrhoea*. *N. meningitidis* isolation has been reported from urogenital and rectal sites recently by Odegaar⁴ and Given et al⁵.

While investigating unsuspected female population for possible gonococcal

infection in them, we detected one patient with *N. meningitidis* infection in her endocervix. We screened a total of 410 females attending Obstetric and Gynaecology Out-patients of S. S. Hospital, Banaras Hindu University (India) and isolated gonococcal infection in 42 women, *N. Meningitidis* in one and other *Nesseria* in four among the subjects studied.

Case Report

A married female aged 26 years, a second gravida in 34th week of gestation reported for routine antenatal check up on 16th May, 1976. She had no complaints except for occasional excessive vaginal discharge. Her first conception was 2 years earlier and she delivered a normal baby. On examination, she was found to be healthy and well nourished. Height of uterus corresponded with 34 weeks of gestation. Routine urine and blood examinations were within normal limits. VDRL was non-reactive. Vaginal examination revealed cervical erosion with greenish-yellow frothy offensive discharge. *Trichomonas vaginalis* was isolated under direct microscopy. Culture of endocervical specimen in Chacko-Nair medium had grown oxidase positive

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colonies which simulated *Neisseria gonorrhoea* colonies macroscopically. Gram's staining of oxidase positive colonies revealed gram-negative diplococci in profusion. Fermentation reaction of the colonies on subculturing in fermentation media containing 1% glucose, maltose, lactose, sucrose respectively resulted in production of acid in glucose as well as maltose containing media. A suspicion arose about possible *Neisseria meningitidis* infection. A repeat culture of cervical specimen 3 days later without the aid of CO₂ was undertaken. Colonies, however, grew as before and gave identical results with oxidase and fermentation reaction. A diagnosis of *N. meningitidis* was made. The patient on further questioning denied fallatio or extramarital contact but agreed to have had peno anal coitus with her husband several times during her present conception. She refused rectal examination. A blind culture from anus and throat failed to grow *Neisseria* colonies. Her husband did not report for examination.

Discussion

Though the majority of reported isolation of *N. meningitidis* from urogenital tract was associated with systemic manifestations of disseminated meningococcal infection^{1, 3, 6}, isolation of *N. meningitidis* without any evidence of systemic manifestation have also been documented^{2, 5, 7}. We isolated *N. meningitidis* in the genital tract of one patient while screening 410 females for possible *N. gonorrhoeal* infection. Repeated cultural studies along with oxidase and fermentation reaction left us with little doubt that the isolated organism was *N. meningitidis*. The subjective complaint of recurrent vaginal discharge and objective finding of cervical erosion could have been due to primary infection with *N. meningitidis*. However, this could have been confirmed by follow up of our patient, treating her initially with trichomonocidal drug,

before undertaking penicillin therapy. This we could not do, as the patient hailed from a distant place. There was no past or present clinical evidence to suggest a possible meningococcaemia in the patient.

It is, however, difficult to prove the mode of transmission of *N. Meningitidis* into the cervix in our case. Patient denied fallatio. Blind rectal culture was unproductive and so was the throat culture. She had no complaints such as proctitis at any time. We failed to get the husband around for investigations. There is a strong possibility of transmission from rectum to cervix through penoanal coitus. The fact remains, that our isolated strain was of *N. meningitidis*. This calls for an awareness of this infection as a sexually transmitted disease though very rare indeed. Confusing *N. meningitidis* with *N. gonorrhoeae* could happen by oversight, if one is not particularly conscious about this rare possibility.

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