# NAEGELE PELVIS

## (A Case Report with Review of Literature)

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The Naegele pelvis is one of the great rarities, and many senior obstetricians confess not to have encountered such a case. Franz Carl Naegele, a professor of midwifery at Heidelberg, recognised this obliquely ovate pelvis in 1803 and published a monograph in 1839 which included his observations on 37 specimens. Till 1941, Stander could collect 100 cases from the literature. Chan et al (1964) reported 17 cases in 13 years, observed in Hong Kong, with incidence of 1: 2480 deliveries. The diagnosis is liable to be missed due to its rarity unless the condition is kept in mind. Hence the desire to report the case.

**Case Report**

K. G. N., a Christian female, 28 years old, para I, gravida II, attended the antenatal department of the L.T.M.G. Hospital, Sion, on 14th July 1965, when she was 8 months pregnant. She gave history of lower segment caesarean section being performed 2 years ago at the same hospital for gross cephalo-pelvic disproportion (the abnormality of the pelvis, however, was undetected). Her blood pressure was 120/80 mm. Hg., haemoglobin 12 gms.% and there was no albuminuria. The presentation of the foetus was left occipito-anterior, floating. Foetal heart sounds were present.

At 9 months, abdominal examination revealed gross cephalo-pelvic disproportion. Her abdomen was pendulous. Lateral and inlet views of pelvis were advised. The inlet view revealed the absence of the right ala of the sacrum (Photo 1). A diagnosis of Naegele pelvis was made and the patient was now examined with this entity in mind.

The patient did not give any history of trauma or infection of the pelvic or vertebral bones. There was no scar in the pelvic region. Her gait was without any limp. At term, she had markedly pendulous abdomen. There was a tilt of the pelvis on the left side and the lumbar vetebrae revealed scoliosis with convexity to the right. The rhomboid of Michaelis was distorted (Photo 2). The external diameters of the pelvis were as follows:

Interspinous 20 cms; intercristal 22.5 cms.

From the spinous process of the last lumbar vertebra to ant. sup. iliac spine on each side: Left 15 cms; right 10 cms.

From the middle of superior border of symphysis pubis to the post. sup. spine on each side: Left 18 cms; right 16 cms.

From the middle of the superior border of symphysis pubis to ant. sup. iliac spine on each side: Left 11 cms; right 14 cms.

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The vaginal findings were as follows:

1. The sacral promontory could be reached with some difficulty.
2. Complete fusion of the right sacro-iliac joint.
3. The iliopectineal line of the affected side was less curved.
4. The sacrum was pushed to the affected side. Its anterior surface was tilted towards that side.
5. The pubic symphysis was displaced to the opposite side.
6. The lateral pelvic wall on the affected side was flattened and pushed to the midline as compared to the opposite normal side. Both walls were converging.
7. The ischial spine on the affected side was prominent.
8. The subpubic angle was narrow.
9. The sciatic notch on the affected side was narrower.

Intravenous pyelography revealed normal kidney excretory function with no anomaly.

*Origin:*

Naegele defined the anomaly as, "Pelvis contracted in one of the oblique diameters with complete ankylosis of the sacro-iliac synchondrosis on one side, combined with imperfect development of the sacrum and the os inominatum on the same side." (Thoms, 1944). He believed it to be due to a congenital defect involving one ala of sacrum with resulting imperfect development of sacral portion of the sacro-iliac joint. Williams (1929) and Reinberger (1933) agreed to the embryonic origin of the defect. Thomas in 1860 stated it to be of inflammatory origin in certain cases, while Breus and Kolisko (1900) firmly believed it to be always inflammatory (ostitic) in origin. Out of 4 cases reported by Thomas (1944) one gave history of incision and drainage of a tuberculous abscess on the left thigh at the age of 2 years. Chan et al. (1964) in their collection of 17 cases had 3 cases with history of past infection. Of these, 2 had a residual scar of a discharging sinus. They termed these as cases of pseudo-Naegele pelvis as they did not fulfil all the criteria laid down by Naegele.

Berry Hart (1917) thought this anomaly as a result of polar losses of the size elements of alae sacri and innominate bones due to maturation of the sperm and germ cell. As this is a germ plasma change and multiplication of reduced elements occurred it may be transmitted.

*Diagnosis*

The gross deformity is conspicuous by its absence.

Similarly in a great majority of cases, limping gait is absent. According to Breus and Kolisko the scoliosis which develops in the lumbar region is compensated for by a second curve higher up in the vertebral column with its convexity in the opposite direction. The symphysis pubis occupies the middle position and the body weight is transmitted with about equal force to the heads of the two femora, and hence no limping.

Lateral vaginal wall on the affected side is found to be displaced towards the midline on palpation. Other findings of vaginal examination are already described.

Chan et al. (1964) found the external diameters as described by Naegele to be useless.

Radiological examination helps to define the pelvic anomaly. In many cases reported in the literature as in our case, the diagnosis of the anomaly was made after radiological examination. Anomalies of uro-

genital system of the nature of duplex kidney wlth double ureters, lower position of the kidney on the affected side, uterus bicornis unicollis etc. have also been reported (Stabler, (1949); Chan *et al.* 1964). Hysterosalpingography will help to detect these.

*Mode of Delivery*

Of the 35 deliveries, in 17 cases described by Chan et al (1964), 30 were by caesarean section and 5 were spontaneous. During discussion of the present case Dr. B. N. Purandare (giving example of his own sister) observed that normal vaginal delivery can occur in cases of Naegele pelvis.

However, in the present case a lower segment caesarean section was performed as there was a history of previous caesarean section and there was gross cephalopelvic disproportion.

*Summary*

A case of Naegele pelvis has been reported and the literature on the subject is reviewed.

The diagnosis is likely to be missed by conspicuous absence of gross deformity and limping gait. However, with proper pelvic examination and x-ray investigation one is less likely to miss the anomaly.

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*Figs. on Art Paper I*