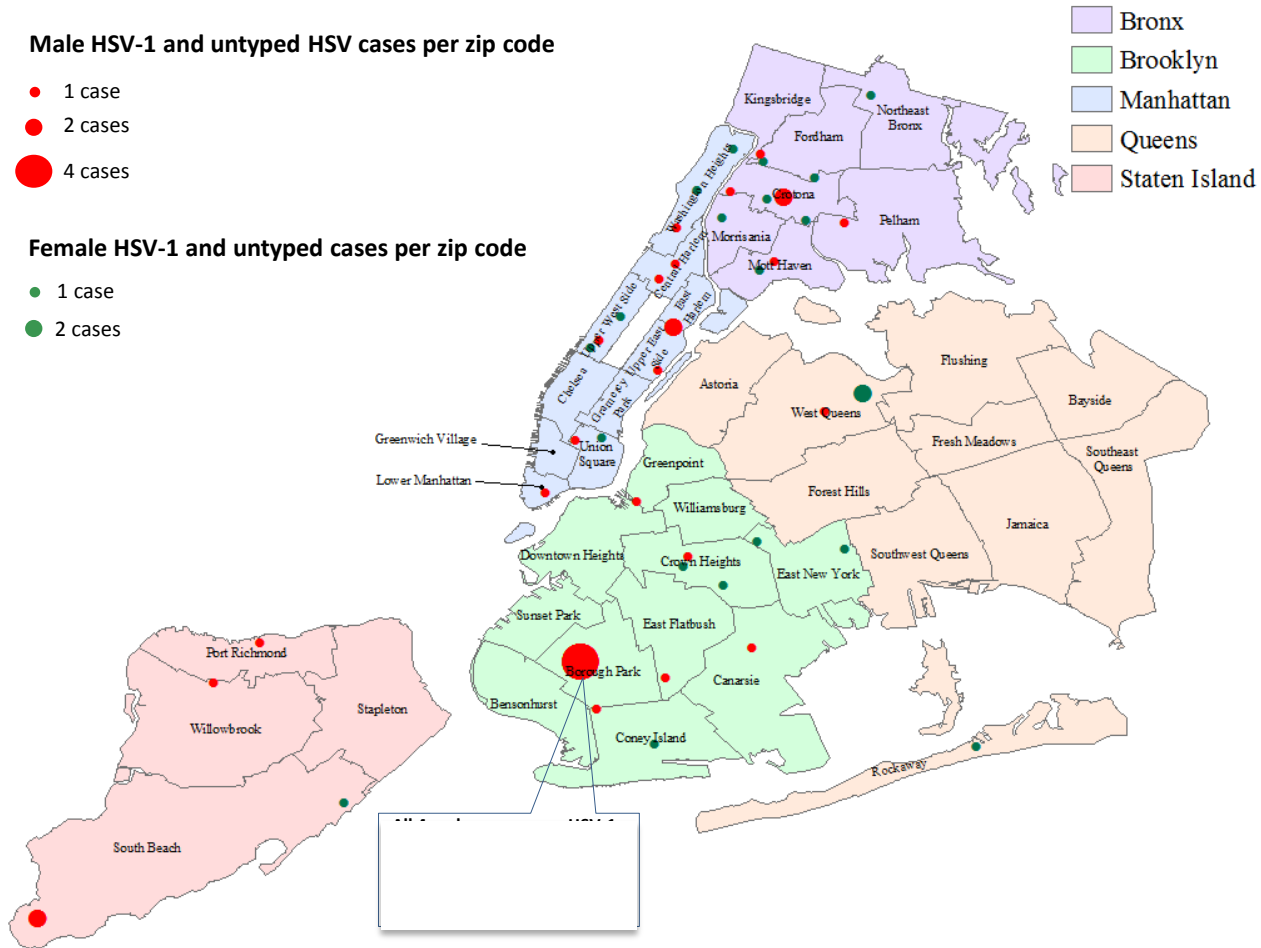


The relevance of Ignaz Semmelweis

- Between 2006 and 2011 New York City Health department was notified of 11 cases of genital herpes infection in new-born boys.
- 5 of the boys went on to develop CNS herpes encephalitis
- All 5 severely neurologically impaired at follow-up



MAP. HSV-1 and untyped neonatal HSV infection among male and female infants, by zip code of residence, April 2006-December 2012, New York City



What else do you want to know?

- All HSV-1 infections
- 6 out of 11 delivered by Caesarian section
- In the 5 delivered vaginally, 4 of the mothers were negative for HSV-1 or HSV-2
- Lesions appeared between day 15 and day 29 of life

- Why is this occurring only in boys?
- Why are they all HSV-1?
- Why are they occurring in HSV negative mothers?
- Why are they presenting with genital herpes?
- Why are the cases apparently clustering?

- What is the mechanism?

Metzitzah

- According to Biblical Law, a male infant should be circumcised at the age of 8 days (Genesis 17:10-14; Leviticus 12:3)
- The Babylonian Talmud states that for the sake of the infant the *mohel* is obliged to perform the metzitzah “so as not to bring on risk”.
- Metzitzah = direct orogenital suction (DOS)

Has this been described before?

Neonatal Genital Herpes Simplex Virus Type 1 Infection After Jewish Ritual Circumcision: Modern Medicine and Religious Tradition

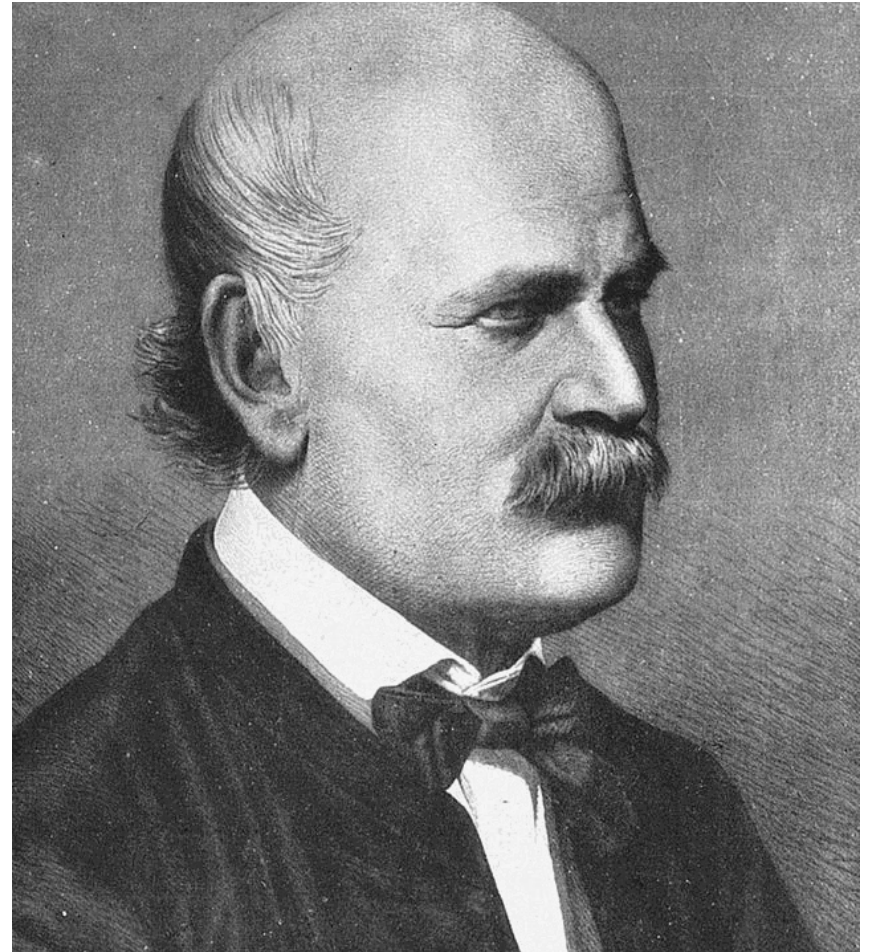
Benjamin Gesundheit, MD*; Galia Grisaru-Soen, MD‡; David Greenberg, MD§; Osnat Levtzion-Korach, MD||;
David Malkin, MD¶; Martin Petric, PhD#; Gideon Koren, MD**; Moshe D. Tendler, PhD‡‡;
Bruria Ben-Zeev, MD‡; Amir Vardi, MD‡; Ron Dagan, MD§; and Dan Engelhard, MD||

Pediatrics 114;259-263. 2004

- Do you know of any other diseases spread by this mechanism?
- Tuberculosis
- Ignaz Semmelweis observed this and advised against the practice of metzitzah

Ignaz Semmelweis

- Who was he?
- Hungarian physician, b July 1818, d. Aug 1865
- Described as “the saviour of mothers”. Famous as an early pioneer of antiseptic procedures.



The “Simmelweis Reflex”

- Reflex rejection of new knowledge because it contradicts entrenched norms, beliefs or paradigms.

Neonatal HSV infection

- HSV infection in neonatal period
- 5% acquired in utero
- 85% acquired during delivery
- 10% acquired post-natally via direct transmission from adults

In utero HSV infection

- Microcephaly
- Cataracts
- Intracranial calcification
- IUGR
- Vesicular rash



Neonatal HSV infection

- 3 categories
 - Skin, eye and mouth disease (43%)
 - Disseminated disease (23%)
 - Encephalitis (34%)

Neonatal HSV encephalitis

- Usual presents with non-specific features during second or third week of life e.g. poor oral intake, behavioural change, fever
- Progresses to:
 - Focal or generalised seizures
 - Apnoea
 - Lethargy
 - coma

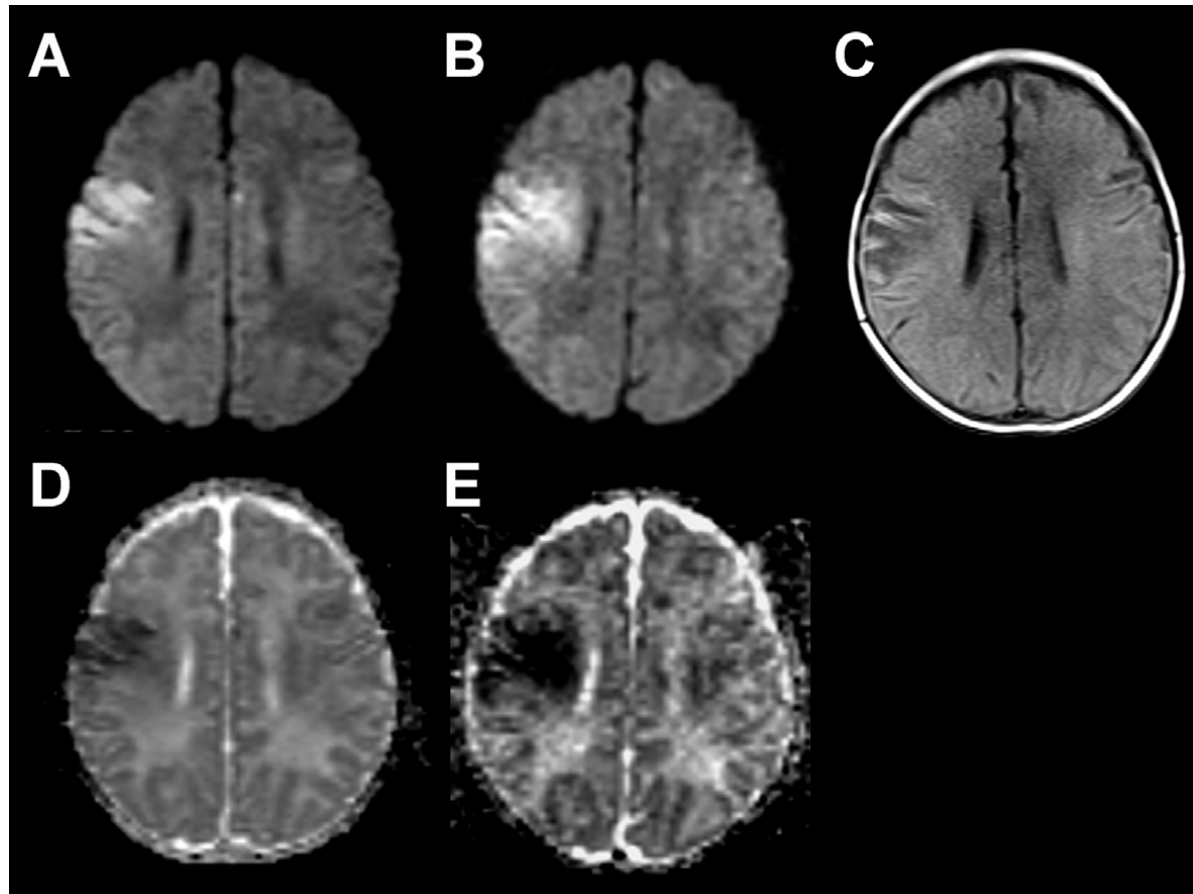
Neonatal HSV encephalitis

- In 1/3 of cases – HSV confined solely to CNS
- Mechanism of virus entering CNS via haematogenous spread from acute infection

Diagnosis

- Clinical history and presentation
- Isolation of virus from skin or mucous membrane lesions
- CSF
 - Raised protein
 - Lymphocytic pleocytosis
 - Detection of HSV DNA by PCR
- EEG
 - Slow background with paroxysmal discharges that may be periodic

Neuroimaging



Treatment

- Supportive care
- Acyclovir 20 mg/kg Q8h for 21 days

Outcome

- 10% mortality
- 40% of surviving infants will have severe neurological sequelae despite acyclovir therapy
- Fewer than 40% will recover to baseline
- Permanent pseudobulbar palsy with mutism and feeding difficulties has been described.