Background

- Mumps is an acute, viral illness whose classic symptom presentation includes parotids (swelling of the parotid salivary glands)
- Other causes of parotitis exist, both infectious and non-infectious
- Mumps is the only known cause of epidemic parotitis
- Approximately 50% of adults have evidence of mumps infection
- In the United States, mumps is well controlled, with approximately 100 cases reported annually
- Mumps vaccination coverage rates in the U.S. are generally 90% for one dose, and 94% for two doses
- Laboratory diagnostic tests for mumps include:
  - Detection of anti-mumps IgM antibody
  - Four-fold increase in anti-mumps IgG antibody titer measured by quantitative assay or seroconversion from negative to positive using a standardized seroconversion essay of paired sera
- Detection of mumps RNA using RT-PCR
- Isolation of mumps virus in cell culture
- Among previously vaccinated or previously infected people
  - Mumps viremia is generally not detectable
  - Mumps IgG test results may be positive or of a low titre on initial blood draw
  - Viral detection by RT-PCR or culture may have a low yield if the specimen was collected more than 2 days after parotitis onset
- Therefore, a suspect case of mumps cannot be ruled out based on negative laboratory test results

Methods

- Eight locations participated in this project during 2006-2011:
  - Arizona, California, Kansas, Michigan, North Carolina, Philadelphia, Tennessee, and Washington State
- Following enrollment, routine procedures, health departments investigated cases of parotitis under the assumption that they were cases of mumps:
  - Demographic data, clinical details, exposure history, and vaccination information were collected
  - Buccal and throat swab specimens were requested
  - Medical record reviews were conducted
- Patient inclusion criteria included:
  - Presence of viral parotitis
  - Presence of at least one laboratory test positive for mumps
  - No epidemiological link to a confirmed or probable case of mumps
  - No laboratory test positive for mumps
- No specimen was positive for more than a single virus
- No virus detected in 45% of patients vaccinated for mumps, and in 50% of patients not vaccinated for mumps
- A virus was detected in 42% of specimens collected within 2 days of parotitis onset, and in 32% of specimens collected on days 3-12
- A virus was detected in 45% of patients vaccinated for mumps, and in 50% of patients not vaccinated for mumps
- Viral detection by RT-PCR or culture may have a low yield if the specimen was collected more than 2 days after parotitis onset

Etiologic Investigation of Sporadic Cases of Parotitis

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Conclusions

- Non-mumps viruses may be associated with parotitis
- There may be a true positive value of a clinical diagnosis of sporadic cases of mumps
- The mumps virus detected may not have caused the parotitis, as the carriage rate among individuals without parotitis was not assessed
- At the time of testing, the association between HHV-6A and parotitis was unclear, but more data may suggest such an association exists

Acknowledgements

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