Mumps

Mumps is an ***acute self-limited infection*** that was once commonplace but is now unusual in developed countries because of widespread use of vaccination.
It is characterized by fever, bilateral or unilateral parotid swelling and tenderness.
History of exposure to a similar illness is important as humans are the only known natural hosts and the virus is acquired by direct intimate contact with oropharyngeal secretions (droplets).

ETIOLOGY

Mumps virus is in the family Paramyxoviridae and the genus *Rubulavirus.*
It is a single-stranded pleomorphic RNA virus Mumps virus exists as a single immunotype, and humans are the only natural host.

EPIDEMIOLOGY

In the prevaccine era, mumps occurred primarily in young children between the ages of 5 and 9 yr and in epidemics about every 4 yr.
Mumps infection occurred more often in the winter and spring months.
Outbreaks continued to occur *even in highly vaccinated* populations as a result of vaccine failure and also because of undervaccination of susceptible persons.
Mumps is spread from person to person by respiratory droplets.
Virus appears in the saliva from up to 7 days before to as long as 7 days after onset of parotid swelling. ***The period of maximum infectiousness is 1-2 days before to 5 days after onset of parotid swelling***.
Advisory Committee recommend an ***isolation period of 5 days after onset of parotitis for patients with mumps in both community and healthcare settings.***

CLINICAL MANIFESTATIONS

The incubation period for mumps ranges from 12-25 days but is usually 16-18 days. Mumps virus infection may result in clinical presentation ranging from asymptomatic or nonspecific symptoms to the typical illness associated with parotitis with or without complications involving several body systems.

The typical patient presents with a prodrome lasting 1-2 days and consisting of fever, headache, vomiting, and achiness.
Parotitis then appears and may be unilateral initially but becomes bilateral in approximately 70% of cases.
The parotid gland is tender, and parotitis may be preceded or accompanied by ear pain on the ipsilateral side. Ingestion of sour or acidic foods or liquids may enhance pain in the parotid area. As swelling progresses, the angle of the jaw is obscured and the ear lobe may be lifted upward and outward.
The opening of the Stensen duct may be red and edematous.
The parotid swelling peaks in approximately 3 days and then gradually subsides over 7 days.
Fever and the other systemic symptoms resolve in 3-5 days.
A morbilliform rash is rarely seen.
Submandibular salivary glands may also be involved or may be enlarged without parotid swelling. Edema over the sternum as a result of lymphatic obstruction may also occur.

DIAGNOSIS

The diagnosis could be made on the basis of a history of exposure to mumps infection, an appropriate incubation period, and development of typical clinical findings.

1. CBP: Leukopenia with a relative lymphocytosis.
2. ↑ serum amylase (due to parotitis).
3. Serological studies (Mumps immunoglobulin G antibodies, enzyme immunoassay for mumps immunoglobulin M antibody is used to identify recent infection). viral isolation(Virus can be isolated from upper respiratory tract secretions,CSF, or urine during the acute illness)& culture, PCR.

DIFFERENTIAL DIAGNOSIS

Parotid swelling may be caused by many other infectious and noninfectious conditions.
Viruses that cause parotitis include:

1. parainfluenza1 and parainfluenza 3 viruses, influenza A virus.

2. cytomegalovirus.
3. Epstein-Barr virus.
4. Enteroviruses.
5. lymphocytic choriomeningitis virus.
6. HIV.

Purulent parotitis, usually caused by *Staphylococcus aureus*,is unilateral, is extremely tender, is associated with an elevated whiteblood cell count, and may involve purulent drainage from the Stensen duct.

Submandibular or anterior cervical adenitis from a variety of pathogens may also be confused with parotitis.

Other noninfectious causes of parotid swelling include :

1. obstruction of the Stensen duct,
2. collagen vascular diseases such as Sjögren syndrome, systemic lupus erythematosus.
3. tumor

COMPLICATIONS

1. ***Meningitis and Meningoencephalitis:*** Symptomatic CNS involvement occurs in 10-30% of infected individuals, but CSF pleocytosis has been found in 40-60% of patients with mumps parotitis. The meningoencephalitis may occur before, along with, or following the parotitis. It most commonly manifests 5 days after the parotitis. Clinical findings vary with age. Infants and young children have fever, malaise, and lethargy, whereas older children, adolescents, and adults complain of headache and demonstrate meningeal signs. In typical cases, symptoms resolve in 7-10 days. CSF in mumps meningitis has a white blood cell pleocytosis of 200-600/μL with a predominance of lymphocytes. The CSF glucose content is normal in most patients***(low glucose in 20%).***

Less-common CNS Cxs of mumps include: transverse myelitis, aqueductal stenosis, facial palsy and rarely sensorineural hearing loss.

2. ***Orchitis and Oophoritis:*** Involvement in **prepubescent boys is extremely rare**, but after puberty, orchitis occurs in 30-40% of males. It is manifested as fever, chills, and exquisite pain and swelling of the testes. Atrophy of the testes may occur, but **sterility is rare** even with bilateral involvement. Oophoritis is uncommon in postpubertal females but may cause severe pain and may be confused with appendicitis.
3. ***Pancreatitis*** may occur with or without parotid involvement. Severe disease is rare, but fever, epigastric pain, and vomiting are suggestive
4. ***Uncommon and rare Cxs*** of mumps include: conjunctivitis, optic neuritis, pneumonia, nephritis, myocaditis, arthritis, thyroiditis, and thrombocytopenia
5. ***Maternal infection*** with mumps during the 1st trimester of pregnancy results in ↑ fetal wastage. No fetal malformations have been associated with intrauterine mumps infection

TREATMENT

No specific antiviral therapy is available for mumps. Management should be aimed at reducing the pain associated with meningitis or orchitis and maintaining adequate hydration. Antipyretics may be given for fever.

PROGNOSIS

The outcome of mumps is nearly always excellent, even when the disease is complicated by encephalitis, although fatal cases from CNS involvement or myocarditis have been reported

PREVENTION

Isolation of patients at least 5 days after onset of parotid swelling. **Immunization** with the live mumps vaccine.It is given as part of the MMR 2dose vaccine schedule, at 12-15 mo of age for the 1st dose and 4-6 yr of age for the 2nd dose. If not given at 4-6 yr, the 2nd dose should be given before children enter puberty.