

# Mumps Orchitis: A Rare Case Report

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**Abstract:** *Mumps is a relatively mild short - term viral infection of the salivary glands that usually occurs during childhood. Meningitis/encephalitis is a well - known complication of mumps, but involvement and infection of the testis in adolescent boys and adult men are rare. We report a case of an 22 - year - old male patient with mumps associated epididymo - orchitis on the right side. The diagnosis was confirmed clinically and serologically by IgG and IgM titers. The symptoms were resolved after the administration of anti - inflammatory and pain medications with bed rest and ice packs applied to the area.*

**Keywords:** Epididymo - orchitis, mumps, orchitis

## 1. Introduction

Mumps is an acute, systemic, contagious viral infection which is characterized by painful swelling of one or both parotid glands. It can also involve other salivary glands, meninges, pancreas, and the gonads. Orchitis developing in association with mumps is a universally recognized complication of mumps. It manifests a few days after the appearance of the parotid swelling, but occasionally may precede it, and rarely may present even without the parotid swelling. Mumps associated orchitis results in severe pain, swelling, and tenderness at the affected site and is often associated with high fever, nausea, vomiting, and abdominal pain. It resolves over a week though gonadal tenderness may persist for a long time. The possibility of sterility occurring in males is the most serious complication of the mumps syndrome. Frequency of occurrence of orchitis varies with age, and with each epidemic.

## 2. Case Report

A 22 - year - old male reported to outpatient department of Civil Hospital, Rajkot on March 2, 2024 with the complaint of fever, malaise, myalgia, and unilateral tenderness on the right side of the face with overlying facial edema since 4 days. The pain and swelling were associated with earache and difficulty to eat, swallow, and talk with difficulty in opening the mouth.

General physical examination revealed a well - built stature. Mouth opening was reduced to 3 cm. Trismus resulting from parotitis was observed. Swelling and tenderness of the

submaxillary and sublingual glands were variable. On intra oral examination, the orifice of Stensen's duct appeared red and swollen. Past dental history revealed uneventful extraction of mandibular right first molar 6 months previously. A clinical diagnosis of mumps was made. The diagnosis was then confirmed with positive serologic test for IgM antibody, and IgG antibody with a 4 - fold rise in titers. The patient was treated symptomatically with hydration. Analgesics were used for fever, myalgias, and discomfort caused by parotitis.

Six days following the initial symptomatic treatment for fever and parotid swelling, the patient was hospitalized for fever, nausea, vomiting, and painful right scrotal swelling.

There is no dysuria or urethral discharge. There was no record to suggest a sexually transmitted illness. On examination, the right testis was enlarged measuring 7 cm × 6 cm × 6 cm, tender and hard in consistency. image 1. swelling over right side of face image 2. right scrotal swelling

The left testis and cord were normal. In the routine laboratory investigations, it was observed that white cell count was raised to 12, 200/mcL, and C - reactive protein to 30 mg/L. Urine microscopy was normal. Blood and urine cultures showed no significant growth. Considering the clinical examination of the scrotum which showed a swollen and edematous right testis and epididymis, features exhibiting of epididymo - orchitis, confirms the diagnosis of mumps orchitis. The patient was treated with anti - inflammatory medications, pain medications, and bed rest with an elevated scrotum and ice packs applied to the area.



### 3. Discussion and Conclusion

Clinically, Mumps can be defined as an illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid and/or other salivary gland(s), without other apparent cause. The term “mumps” is derived from a word meaning “grimace”. Mumps is caused by an RNA virus of the genus Rubella virus belonging to the family of Paramyxoviridae. The mode of transmission of the viruses can be through the human reservoir by direct contact, airborne droplets, fomites infected by saliva, and possibly by urine.

The Possible complications of mumps are aseptic meningitis, encephalitis, hearing loss, orchitis, oophoritis, parotitis or other salivary gland swelling, mastitis or pancreatitis. Orchitis developing in association with mumps is a universally recognized complication. They are the most common clinical manifestations after parotitis in adolescent boys and adult men, usually in the age group of 15–29 years.

Epididymo-orchitis does not occur if the infection occurs prior to adolescence. In 80% of all mumps orchitis cases, symptoms are first seen in the first 8 days of the parotid swelling but occasionally may precede it and rarely may manifest itself present even without the parotid swelling. It results in severe pain, swelling, and tenderness at the affected site and is often associated with high fever, nausea, vomiting, and abdominal pain. It resolves over a week, though, gonadal tenderness may persist for a long time. In about 20–30% of cases orchitis is unilateral, and 10–30% cases are bilateral. Of the affected testicles, 30–50% show a degree of testicular atrophy.

Mumps Orchitis rarely leads to sterility, but it may contribute to subfertility. It can lead to oligospermia, azoospermia, and asthenospermia (defects in sperm movement). Impairment of fertility is estimated to occur in about 13% of patients while 30–87% of patients with bilateral mumps orchitis experience infertility.

Studies By Adamopoulos et al. on the levels of various hormones in mumps orchitis, have found low testosterone levels, elevated luteinizing hormone (LH) levels and an exaggerated pituitary response to LH-releasing hormone stimulation in the acute phase of mumps orchitis. After 10–12 months of the acute phase of the disease the basal testosterone concentration returned to normal level but the mean basal follicle stimulating hormone (FSH) and LH concentrations remained significantly high.

Histologically, it has been suggested that testicular atrophy is due to parenchymal inflammation due to virus in the testicular glands leading to separation of seminiferous tubules and perivascular interstitial lymphocyte infiltration. A barrier against edema if formed by tunica albuginea leads to rise in intratesticular pressure and pressure-induced testicular atrophy.

Use of steroid in patients with mumps orchitis is not advised as, the steroids could further lower the level of testosterone and increase the level of FSH and LH, aggravating testicular atrophy.

Mumps can be prevented by immunization with measles, mumps, and rubella (MMR) vaccines for MMR into one shot. The majority children who receive the vaccine acquire immunity to all three diseases (over 99% for measles and 95% for mumps and rubella). Protection for these diseases is thought to be life-long. The vaccination is recommended in two doses with the first dose given at 12–15 months of age. As of today, there is no need to give a booster dose of MMR in India. This is because the routine coverage by MMR is common which act like natural booster in vaccines. The second dose may be given 4 weeks after the first, but it is usually given at 4–6 years.

Mumps orchitis is a severe complication of mumps which can lead to sterility in postpubertal males. Immunization and education regarding its complications is the best policy to avoid mumps-related complications. However, the treatment needs to remain conservative.

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