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Ludwig's Angina: A Systematic Review

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ABSTRACT

Ludwig's Angina is an infection of the submandibular space that spreads quickly and might be fatal or seriously impair the airways.The most common cause of Ludwig's angina is a dental infection, however, it can also be brought on by pharyngeal infections or other infections.The goal of the present study was to assess the clinical characteristics and treatment choices for Ludwig's angina. In this investigation, secondary sources were used The interior jugular thrombophlebitis, mediastinitis, empyema, pericardiac effusion, subphrenic abscess, aspiration pneumonia, and serous membrane effusion are far-famed consequences of Ludwig's angina. Our study highlights the importance of early diagnosis, airway control, broad-spectrum antibiotic therapy, and surgical intervention to effectively carefor Ludwig's angina patients. This review is an illustration of Ludwig's angina and the challenges encountered in treating it. The key to managing this is early detection and prompt intervention.Although Ludwig's angina can be fatal, it typically passes without any issues. When patients receive a quick diagnosis, sufficient airway care, intense IV antibiotic medicine, incision and drainage, and attentive monitoring, the majority of patients experience favorable outcomes. Ludwig's angina should be known in its earliest stages to forestall complications.

Keywords- Ludwig's angina, Therapy, Airway obstruction

Conflict of Interest: Nil.

INTRODUCTION

German physician Ludwig Friedrich von Ludwig first identified the condition in 1836 as a rapidly progressing, frequently fatal gangrenous cellulitis with edema of the soft tissues of the neck and floor of the mouth. This name was given to Ludwig's angina in his honor [1]. The most dangerous side effect of Ludwig's angina is airway obstruction, which shows up as an elevated and posteriorly displaced tongue, swelling of the soft tissues, and a rise in edema. Ludwig's angina had a mortality rate of more than 50% before the development of antibiotics. Today, because of antibiotics, improved imaging technologies, and greater surgical techniques, mortality has been reduced to 8% on average [2].

People with Ludwig's angina frequently experience pain in the submandibular region. The sublingual space is located superiorly while the submaxillary space is located inferiorly as a result of the mylohyoid muscle. Odontogenic causes account for the bulk of Ludwig's angina cases, with second and third-molar infections being the main offender. These teeth's roots extend into the submaxilla, providing direct access to the mylohyoid ridge for any abscess or dental infection that affects them. The sublingual region becomes infected once an infection begins to spread. If the pharyngomaxillary and retropharyngeal regions are affected, the disease's contiguous spread may fully enclose the airway [3].Oral cancer, peritonsillar or parapharangeal abscesses, mandibular fractures, mouth lacerations or piercings, submandibular sialadenitis, and mandibular fractures are additional reasons. Predisposing variables include oral decay, recent dental work, systemic illnesses such as diabetes mellitus, malnutrition, alcoholism, a weakened immune system like AIDS, and organ transplantation. Suffocation has a 50% fatality rate, therefore it frequently leads to death if treated without.Mortality has significantly decreased to less than 10% as a result of the widespread use of antibiotics, substantial surgical intervention, and improved dental care[4].

Causes

Bacteria from tooth infections or poor oral hygiene are what cause this skin infection. Periodontitis, gingivitis, a cavity, a tooth abscess, or tooth infection can all lead to Ludwig's angina. The second and third molars are frequently impacted by these diseases. Streptococcal and staphylococcal bacteria, including Streptococcus viridans, Staphylococcus epidermis, and Staphylococcus aureus, are the most common forms of bacteria to cause Ludwig's angina [5].

Symptoms and Signs

The poisoned region spreads swiftly. You can find it challenging to breathe or swallow saliva as a result. Breathing issues would be the first and most important symptom in a patient with Ludwig's angina. The airway becomes obstructed when the infection has progressed to the point of infecting the windpipe, which is mostly to blame.

Neck infections and swellings are frequent indicators of this condition since the patient would feel discomfort when swallowing and deglutinating once infected. The patient would also endure excruciating neck pain as a result of the infection. Both the increase in surface temperature and the reddening of the skin is caused by the same region. In one of the cases, the patient additionally reported having intraoral pus discharge. As the infection spreads, patients have a fever, however, this is often not noted as a noticeable symptom. The airway becomes vulnerable due to pain, trismus, airway edema, and tongue displacement. It is also possible for the patient in these situations to experience mental distortion and poor cognitive performance. According to some scientists, this is brought on by a lack of oxygen reaching the brain. Further investigation is being conducted to learn how frequently this particular ailment manifests itself, though. If the infection spreads to the auditory canal, the patient may have terrible ear pain and a headache. The patient suffered hearing loss 10% of the time. mostly because the infection has spread to the inner ear [6].

Other Symptoms

Ludwig's angina is another name for the face condition known as true cellulitis. Lower facial edema on both the upper and lower necks is one of the symptoms. This has occurred because the infection has now spread to the submental, sublingual, and submandibular regions of the face. Even while the swelling in the submandibular region is troubling, the biggest risk comes from the fact that the edema has spread internally and is now jeopardizing or, more accurately, obstructing the airway. Two frequently mentioned symptoms, odynophagia (pain when swallowing) and dysphagia (difficulty swallowing), call for prompt attention. The sublingual and submental regions are located anterior to the submandibular space, beneath the chin and midline of the lower jaw. Because of the swelling in these places, the tongue and the floor of the mouth frequently migrate up and backward. A sublingual infection causes the structures in the mouth's floor to expand, and the tongue moves up and backward as a sign of a more compromised airway. When an infection extends to the submaxillary areas, cellulitis symptoms rather than abscess symptoms are frequently present. There is pain and swelling in the submental and submandibular regions. Drowsiness, fever, dysphagia, odynophagia, and in more severe cases, stridor or breathing issues, are other symptoms. Additionally, there may be different levels of trismus. Edema in the sublingual and/or submandibular regions is a serious problem. The patient would speak as though they were chewing on a "hot potato". The patient will frequently feel exhausted, worn out, and weak.[7]

Complications

Ludwig's angina, a rapidly developing cellulitis, may obstruct airways and require prompt medical attention. Any symptoms concerning the airways or an inability to control oral secretions should be taken into account to lower mortality. Additionally, constant supervision is necessary to stop the cellulitis from spreading to surrounding areas, which could cause mediastinitis or cellulitis of the neck. Aspiration pneumonia may also manifest.

Diagnosis and Treatment

Although Ludwig's angina was always fatal, the mortality rate has considerably decreased with effective surgical and antibacterial therapy. Treatment options include taking the proper medications, keeping an eye on the patient, protecting the airway when necessary, and getting the proper urgent otolaryngology, maxillofacial surgery, and/or dental consultation to incise and drain the collections. The antibiotic of choice is made by the penicillin family. External or intraoral methods can be used to drain an abscess. If the infection is restricted to the sublingual space, a surgery that includes an intra-oral incision and drainage is necessary. If there is an infection in the peri-mandibular spaces, an external incision and drainage are carried out. An oral airway can occasionally only be penetrated by a nasotracheal tube if the tissues in the mouth prevent this from happening. Skilled airway care is required when the airway's patency is threatened. Fibro-optic intubation is a routine operation. Ludwig's angina is brought on by tooth infections that may require dental care. If the patient's breathing is being hindered by the edema, widening the airway and re-establishing normal breathing is the major objective of therapy.[8] There would need to be prompt medical intervention if the swelling narrowed the airway. You might require a tracheostomy, a procedure that involves cutting a hole in the neck and inserting a tube into the windpipe. The sickness is treated with antibiotics. They are often administered intravenously until symptoms go away. Up until testing indicates that the microorganisms are no longer present, oral antibiotics may be used. Ludwig's angina was determined to be the cause, and the patient was booked for an urgent abscess draining. To remove the fluids that are causing the edema, surgery can be required. Plans included awake fibrotic intubation and tracheostomy as a backup. The patient was apprised of the operation and the necessity of awake nasal intubation, and signed informed consent was acquired for awake intubation and tracheostomy. The patient got 0.4 mg of intramuscular glycopyrrolate before the surgery. There were no safeguards against aspirating acid. Each nostril received two drops of lignocaine 4% topical to numb the nasal mucosa and one drop of oxymetazoline 0.05% nasal drops to treat nasal congestion. 2% lignocaine viscous gargle (5 ml), which was spit out, and 10% lignocaine (2 puffs), which was sprayed on the posterior pharyngeal wall, were used to numb the base of the tongue and the

pharyngeal walls. The following morning, the patient's blood pressure was 110/70 mmHg, his pulse was 68 beats per minute, and his oxygen saturation was 97%. There was less neck edema. The trachea was extubated after a thorough oral suction. The edema had receded and there was no reason to suspect airway issues, so the fiberscope was maintained on standby but no complex tracheostomy or equivalent procedures were planned. Following extubation, recovery went without a hitch. Four days later, the patient was discharged from the hospital.[9]

Objectives of the study
To review Ludwig's angina.

Methodology
For the systematic review, we used secondary sources like books, previously published papers, and highly impacted journals (PubMed, Int J Pediatr Otorhinolaryngol, J Gen Intern Med, Arch Otolaryngol - Head Neck Surg, Ann Ibadan Postgrad Med, etc). We selected 10 papers for review out of 22 papers.

REVIEW OF ARTICLES

Ludwig's Angina: An Analysis of Cases Seen At the University College Hospital, Ibadan
Rapidly spreading cellulitis known as Ludwig's angina simultaneously affects both sides of the submandibular, sublingual, and submental tissue areas (LA). This study examined the management strategies employed in cases that were presented at the University College Hospital in Ibadan for two years to ascertain the causes, complications, length of hospital stays, and results. Between January 2015 and December 2016, all instances of LA seen in the department of oral and maxillofacial surgery were examined. The etiology, signs, and symptoms at presentation, potential risk factors, results of laboratory investigations, length of hospital stay, and treatment outcome were all learned from patient case files. The statistical tool SPSS 22.0 was used to analyze the data and generate descriptive statistics (SPSS Inc., Chicago, IL, USA). There were 13 cases of LA, with an average age of 47.7 years and a gender split of 7 men and 6 women (age range 24-80 years). There was an odontogenic emphasis in each instance. Almost all of the patients had surgery, which included making an incision, draining an abscess, and extracting any problematic teeth. All patients had hospital stays between one and thirty days (mean 10 days). Because of our management as a surgical emergency with early recognition and attention provided to the airway in partnership with the Otorhinolaryngology Unit in our center, this Study observed an 84.6% survival rate.[10]

Ludwig's Angina: Report of 40 Cases and Review of Current Concepts in Emergency Management in a Rural Tertiary Facility Teaching Hospital
We analyze the existing suggestions and evaluate how effective they are at resolving urgent Ludwig's angina cases. A review of Ludwig's angina patients who were admitted to and treated at our clinic between November 2007 and December 2012 was conducted. There were 40 patients, ages 16 to 80, with 24 men (60%) and 16 women (40%) present. Three to two weeks passed before the symptoms disappeared. Dental infections were the most frequent cause, accounting for 23 cases (57.5%), one of which included a pregnant woman. Six cases (15%) were brought on by regular broomstick tooth poking. 3.0 patients (7.5%) had calculi-induced submandibular duct stenosis. In 5 patients, the underlying disease was diabetes (12.5%). Two patients (5%) reported facial trauma as a contributory factor, whereas one patient (2.5%) had buccal mucosal carcinoma. Each patient received systemic broad-spectrum antibiotics, intravenous fluids, and analgesics. Twenty patients (50%) had tracheostomies and surgical decompression using minute incisions while under local or general anesthesia. After an incision and drainage surgery, ten patients (25%) had their damaged teeth removed. Conservative therapy, which included painkillers, antibiotics, and close monitoring for airway obstruction, was given to ten patients, or 25% of the total. There were no fatalities or documented problems. Ludwig's angina is a life-threatening surgical emergency. Early diagnosis and a speedy surgical repair can save lives. Advanced patients are still advised to have proper parenteral antibiotic medication, maintain their airways, and undergo surgical decompression.[11]

A Severe Case of Ludwig's Angina with a Complicated Clinical Course
Ludwig's angina is a cellulitis that can quickly develop along the face planes and affects the submandibular, sublingual, and submental regions. Ludwig's angina is most frequently caused by a tooth infection, but it can also be brought on by pharyngeal or other infections. Airway obstruction is the most dreaded side effect of Ludwig's angina. Early identification allows for the potential use of surgical debridement and the subsequent administration of antibiotics. An airway can be opened as a result. We use the example of a 57-year-old patient who saw the doctor three times for oral pain before being admitted to the hospital with Ludwig's angina. He was found to have Ludwig's angina when he first came, as well as approaching airway blockage. He required urgent surgical airway debridement as well as many teeth extractions. The patient's stay was delayed and complicated by several factors, but he eventually made a full recovery. This case provides an example of the severe presentation of Ludwig's angina and the difficulties the medical staff had in treating it. The treatment of this serious illness depends on quick action and an early diagnosis.[12]

Ludwig's angina: analysis of clinical features and their management strategy: a study of 30 patients

Submandibular infection Ludwig's Angina, which can be fatal or seriously restrict the airways. Quickly, it spreads. Analyzing the clinical characteristics and available therapies for Ludwig's angina was the aim of the current investigation. A clinical diagnosis of Ludwig's Angina was present in 30 participants in the research. Antibiotics taken orally were given to all patients. In some cases, dental extractions and surgical drainage were performed. Age, sex, length of symptoms, clinical presentation, etiology, reports on culture and sensitivity, need for surgical drainage or tracheostomy, hospital stay, and complications were all examined in the patient records. Ages in their third decade of life were the most prevalent. Dental decay was the second most typical cause, after gingivitis. Neck pain and difficulty swallowing were the two most common complaints. The most frequently related co-morbidities were chronic renal failure and diabetes. Surgery was necessary for 21 patients. While one patient was receiving treatment, eight other patients received medical attention. Necrotizing fasciitis was the most frequent side effect. Patients frequently stayed in the hospital for 1-2 weeks. We advise starting surgical management as soon as respiratory problems appear because medical care alone could be dangerous. Conservative management is appropriate for younger patients without co-morbidities or respiratory conditions. The best course of action is to be prepared for early airway care even if no one aspect can predict how this illness would behave.[13]

Rare Angina: A Case Report of Ludwig's Angina

Ludwig's angina is fast-progressing soft tissue cellulitis of the neck and mouth floor. Impairment of the airways is a frequent and potentially fatal consequence of Ludwig's angina. Here, an example of a 54-year-old African American male with severe anterior neck edema and fever is shown. He was hypoxic and febrile when he arrived. A large amount of mediastinum and neck involvement was shown on imaging, even up to the level of the clavicles. When periodontal Ludwig's angina was discovered, the patient needed to be intubated to maintain their airways. Treatments included surgical debridement and a round of broad-spectrum antibiotics. The patient was given oral antibiotics and discharged after things started to get better. Additionally, a dentist was suggested. Our experience emphasizes the significance of early detection, airway care, broad-spectrum antibacterial medication, and surgical treatment in patients with severe Ludwig's angina.[14]

Ludwig's Angina: A Study on Etiology and Factors affecting the Prognosis and Management

To better manage this potentially fatal condition and its side effects, it is important to evaluate the numerous etiological causes of Ludwig's angina, factors that affect the prognosis, and different therapeutic strategies. The Bangalore Medical College & Research Institute (BMC & RI), Department of ENT in Bengaluru, India, conducted a prospective study from January through December of that year. Thirty examples of Ludwig's angina were studied. Age, sex, etiology, concurrent systemic illnesses, microbiology, antibiotic therapy, length of hospital stay, and social background were all factors affecting the patients. The majority of participants in this study were female and in their third decade of life. A dental infection was the cause of the issue in 70% of cases. The most common complaints were trismus (33%), pain (83%), fever (75%), and neck edema (100%). The most common pathogens found were Streptococcus viridans (36.6%), Staphylococcus aureus (16.6%), Streptococcus pyogenes (13.3%), and Klebsiella species (10%). After being admitted for two weeks, 80% of patients were discharged. Ludwig's angina may frequently be challenging to treat. Using proper, aggressive antibiotic medicine, surgical decompression, and excision of infected foci can prevent the sickness process from advancing and prevent additional harm.[15]

Case Report Open Access Ludwig's Angina: A Case Report

Ludwig's angina is a potentially fatal, rapidly disseminating oral cellulitis that affects the face's submandibular, submaxillary, and sublingual regions. If not treated very once, it can be fatal, and complications like septicemia and hypoxia brought on by growing neck edema can also happen. An 11-year-old kid who was sent to the clinic had a sensitive tongue swelling. Ludwig's past medical history and current symptoms led doctors to believe he had angina. Dental infections were discovered after an oral and radiographic examination. Following antibiotic therapy, the child's infected teeth were appropriately extracted. Due to the condition's rarity, many departments may not have much expertise in dealing with it. Therefore, it is important to recognize Ludwig's angina even in its early stages.[16]

Ludwigs Angina: a study of 50 cases

It is necessary to assess the clinical results, morbidity, and mortality of patients with Ludwig's angina. 50 patients with ages ranging from 8 to 78 were treated between January 2007 and December 2008 by the otolaryngology and head-neck surgery department at the Dhaka Medical College Hospital and Apollo Hospitals Dhaka (mean, 45.5 years). There were 14 women and 36 males in the study. The etiology, microbiology, related systemic diseases, therapy, airway management, hospital stay duration, and result were all examined. Patients comprised 42% of the population, and 72% were men. The vast majority of patients were from Bangladesh's rural areas and lower socioeconomic groups. Each patient additionally experienced neck pain, edema, discomfort, and a temperature. Dental infections (70%) and tonsil infections (10%) were identified to be the most frequent causes of Ludwig's angina, followed by submandibular glands (6%). Diabetes mellitus (30%) and chronic renal failure (4%) were systemic diseases. The bacteria that are most usually discovered in pus cultures is streptococcus. All patients received intravenous antibiotics at once. Four people

immediately required tracheostomies. 40 patients had incisions and drainage procedures. At the same time, any infected teeth were removed. In five cases, tracheotomies were performed after surgery, and endotracheal intubation was done in one case to protect the airway. Of the 88 patients, no artificial airway was used in the cases of 44 of them. For one to three days, nine patients got a care in the intensive care unit. Except for one patient, all patients made a full recovery and were all released from the hospital between three and 26 days later (mean, 14.1 days). Ludwig's angina mortality can be considerably decreased by surgical decompression, aggressive antimicrobial therapy, and airway protection.[17]

Ludwig's Angina: Analysing Clinical Profile and Microbiology with Antibiotic Sensitivities at a Tertiary Care Hospital

Ludwig's angina, a severe form of widespread cellulitis caused by an odontogenic infection, presents as an acute onset, grows rapidly, and poses an emergency when it affects the submandibular, sublingual, and submental regions on both sides. Assessing isolated organisms' antibiotic resistance, the distribution of age by sex, comorbidities, their association with odontogenic infection, therapeutic methods, and other factors early on could save lives. The JSS Hospital in Mysore's records from the previous two years is the basis for this study. Ludwig's angina is more common in males than in women, and men over 40 make up the bulk of cases (61.8%), according to one study. Odontogenic infections were the main contributing factor in 26 instances (76.5%). Diabetes mellitus (32.4%) was the most prevalent comorbidity. Incision and drainage with intravenous empirical antibiotics served as the cornerstone of treatment in 94.1% of instances, and tooth extraction was used to treat dental caries in all patients. 32 patients generated a total of 25 different bacterial strains for isolation. The bulk (88%) of the bacteria were gram-positive, with only 12% of them being gram-negative. The most prevalent microorganism was Alpha hemolytic Streptococcus. Cotrimoxazole, erythromycin, and penicillin were unsuccessful against gram-positive bacteria, whereas ceftriaxone was. There are 1.6 times as many men as women, and odontogenic infection is the root cause in 76.5% of cases, which is consistent with past data. Patients with diabetes mellitus who were in the hospital for extended periods had a higher risk of complications. To prevent airway compromise and death, prompt incision and drainage are required. Ceftriaxone and metronidazole would make excellent empirical antibiotic therapy while we wait for the outcomes of the pus culture and sensitivity tests.[18]

Ludwig's angina: Analysis of 28 cases seen and managed in Sokoto, Northwest Nigeria

In a tertiary hospital in Northwest Nigeria, to determine the prevalence, seasonal presentation, and treatment of Ludwig's angina. In Sokoto, Nigeria's Usmanu Danfodiyo University Teaching Hospital, patients with Ludwig's angina were hospitalized for treatment between 2013 and 2015. Using IBM SPSS Statistics for Windows, version 20, the data were kept and examined (IBM Corp., Armonk, NY, USA). 36 people had Ludwig's angina symptoms that were clinically evident during the examination period. Due to incomplete data, eight examples were not included in the study, which limited the number of occurrences examined to 28. A 4.6:1 male-to-female ratio was applied to the 28 patients. Five (17.9%) were female, while the other 23 (82.1%) were men. With an average age of 32.3 and 11.6 years, the sample's age ranged from 18 to 60 years. 11 (39.5%) of the patients were peasant farmers, the majority of whom came from low socioeconomic backgrounds. Only one (3.6%) of the 28 cases (96.4%) was idiopathic; the other 27 were oral infections. (64.3%) of those with an odontogenic origin were the result of caries' aftereffects. In a few cases, sensitivity, culture, and microbiology were used to distinguish between Staphylococcus aureus, Pseudomonas aeruginosa, and Streptococcus species. After a 24-hour incubation period, bacterial growth was typically not observed. 25 persons (89.3%) fully recovered from the illness, however, 3 (10.7%) died as a result. Managing Ludwig's angina can be challenging when there are few resources and employees. The sample's low mortality rate has been attributed to early surgical decompression, thorough empirical antibiotic therapy, and nutritional support.[19]

DISCUSSION

Odontogenic infections including tooth abscesses and impacted second and third molars account for 80% of instances of Ludwig's angina. The name "angina" comes from the Greek word "ankhon," which means "strangling." The submandibular region, where the mylohyoid muscle separates into the sublingual space superiorly and the submaxillary space inferiorly, is the main site of infection in Ludwig's disease. For our review, we used data from a study by Braimah et al. (2016)[19] in which 25 patients (89.3%) survived the condition while 3 (10.7%) perished. These findings are consistent with a prior study by RW (1999)[20] that showed a male majority. According to the literature, where only rare events were reported, there were no pediatric cases in this series (Vigilante et al., 2001)[21] A study from our review (Yusuf Fakir et al., 2008)[17] notes that no artificial airway was employed in 88% (44 patients) of the cases. For one to three days, nine patients were treated in the intensive care unit. All except one patient underwent uneventful recovery, and they were all released from the hospital within 3 to 26 days (mean, 14.1 days). While another study by (Ugboko VI et. al., 2005)[22] discovered a statistically significant difference between the length of the hospital stay and the duration of the disease (P = 0.014). Based on our review, a study (Okoje et al,2018) [18] found 13 instances of Ludwig's angina, with a mean age of 47.7 16.8 years and a gender split of 7 men and 6 women (age range 24-80 years). Almost all patients had surgical intervention, which included incision and drainage (I&D) of abscesses in addition to excision of the problematic teeth. All but two patients survived, with hospital stays ranging from 1 to 30 days (mean 10 days). This

study's 84.6% survival rate is comparable to one conducted by (Huang et al., 2004)[23] In their study, 23 found that 52.4% and 34.1%, respectively, of the patients, were in their fifth and seventh decades. For our analysis, we used a study conducted by (John et al., 2018)[15] The majority of the time (70%) the etiology was a dental infection. The most frequent complaints were neck swelling (100%), discomfort (83%), fever (75%), and trismus (33%). While symptoms, including fever, sore throat, dysphagia, and trismus, were common in another study (Hotaling, 1996)[24] The most prevalent source of infection, in this case, was discovered to be an oral infection. An analysis of our review by (Mine Simsek et.al., 2014)[16] observed that the clinic received a referral for an 11-year-old child who had a sore swelling on the floor of his mouth. The diagnosis of Ludwig's angina was considered likely based on his past and current symptoms. After receiving antibiotic treatment in the current case, the patient fully recovered with extractions without requiring any additional care. A different study (Larawin et al., 2006)[25] looked at patients who had head and neck infections between 1993 and 2005. The infection that 38 individuals (37%) experienced the most frequently was Ludwig's angina. Only 4 (or 10%) patients needed a tracheostomy tube out of the 13 (or 34% of patients) who were effectively managed with medicinal therapy. (M. Kurien et al., 1997)[26] also reported on 41 cases, of whom 76% were adults and 24% were children. In contrast to adults, who needed incision and drainage 81% of the time, 70% of children were managed with conservative medical care.

CONCLUSION

Though it can be fatal, Ludwig's angina typically fades away without any issues. When patients receive a fast diagnosis, sufficient airway care, intense IV antibiotic medicine, incision and drainage, and attentive monitoring, the majority of them experience excellent results. Ludwig's angina must be identified in its earliest stages to prevent complications. It is important to keep in mind that children can contract this condition. Medical and surgical treatment options are used to treat this condition, coupled with airway management, the administration of the proper antibiotics, and ongoing observation. Computed tomography scans can be used in addition to management approaches, especially in deep-seated collections. Ludwig's angina was found to have occurred multiple times, which regrettably delayed the advice for dental surgery and resulted in the development of its most severe form. The various concurrent ailments severely hampered the patient's therapeutic course, which further prolonged the recovery period.

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