INTRODUCTION
For centuries, the diagnosis and treatment of deep neck space infections have challenged the physicians and surgeons due to the complexity and deep location of the region. In the past, these infections were associated with high rates of morbidity and mortality. This has been reduced with the advent of modern microbiology, haematology, development of sophisticated diagnostic tools, effectiveness of modern antibiotics, continued development of intensive care protocols and surgical techniques.

The carotid space, which is formed from portions of all three layers of deep cervical fascia, contains the common carotid artery, its major divisions, internal jugular vein, cranial nerves IX to XII, sympathetic plexus and lymph nodes. It lies posterior to parapharyngeal space, lateral to the retropharyngeal space, anterolateral to the prevertebral spaces and medial to the parotid space and styloid process. Infection in the space occurs most commonly secondary to spread of infection from adjacent fascial spaces.[1]

CASE REPORT
A 50-year-old man was referred to our hospital from a peripheral hospital. He complained of a painful and progressing right-sided neck swelling of five days’ duration, with change in voice and difficulty of swallowing of two days’ duration. He was being given Amikacin and Ceftriaxone for 3 days. Fine needle aspiration from the neck mass showed acute suppurative lesion. He was diagnosed to be diabetic two years earlier and has been on oral hypoglycemics with fairly good control of blood sugars. He had no other significant medical problems or history of drug abuse in the past.

Examination showed moderately built man, looking ill with normal temperature, pulse rate of 96/minute and B.P – 100/70 mmHg. There was no noisy breathing. The neck showed firm lobular swelling on the right side, which was tender to touch. It extended from below the angle of mandible to the clavicle inferiorly. Medially it extended up to the lateral border of trachea, which was pushed to the left. Laterally it extended just up to the posterior triangle of the neck. It was deep to the sternocleidomastoid muscle. Subcutaneous emphysema was felt on the anterior chest wall on the right side. Neck movements were restricted. Oropharynx showed congestion. Indirect laryngoscopy showed right vocal cord fixed in paramedian position and mobile left cord.

X-ray soft tissue neck showed gas filled space lateral to trachea and CT scan neck revealed a 5 cm diameter gas-filled abscess in the right side of the neck, lateral to the common carotid artery, surgical emphysema extending from right anterior chest wall up to mastoid process [Figures 1, 2 and 3]. Blood investigation showed elevated ESR and neutrophilia.

He was started on intravenous Amoxycillin, Clavulanic acid and Metronidazole. After 24 hours of starting antibiotic, incision and drainage of abscess was done under general anaesthesia. A five-centimetre long skin crease incision at the level of thyroid notch was put. The anterior border of sternocleidomastoid was retracted laterally and the cavity was exposed. Five CC pus was drained along with escape of gas bubbles. Drain was placed in the cavity. Daily dressing was done. The pus, however, showed no growth on culture. The smears showed no bacteria or fungus. PCR for tuberculosis was negative.

On the post-operative day 5, repeat X-ray showed decrease in size of gas shadow, but induration of the right side of the neck persisted. Diabetes was brought under control. He was found to be hypertensive and put on medication. The dysphagia decreased. He had complaint of cough on taking liquids, which recovered after few days. On postoperative day 7, he was discharged with advice to continue Amoxycillin and Clavulanic acid.

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ABSTRACT: A case of isolated carotid space abscess is reported here for its rarity. No identifiable cause was detected in this case. Management involved incision and drainage of the abscess, close monitoring for the signs of complications and 8 weeks long antibiotic coverage. The only stigma of the abscess six months after presentation is a unilateral vocal cord palsy. A brief review of related literature is also included.

Key Words: Carotid space, carotid space abscess
Review after a week showed improvement in general condition, though deep seated pain and induration along the right side of the neck persisted. Doppler sonography of the carotid and vertebral arteries showed heterogeneous mass 5.5 x 2.6 cm with air loculi on the right side of the neck antrolateral to the right lobe of the thyroid and right carotid artery just posterior to the sternocleidomastoid muscle. There was no hemodynamic stenosis of carotid artery. The right internal jugular vein was compressed and did not show flow. The skin incision had healed, except for a small gape of 2 mm. He was advised to continue Amoxycillin and Clavulanic along with course of Ofloxacin.

After 10 days he presented with two fluctuant swellings on the right side of the neck, one just above the sternoclavicular joint, measuring 2 x 3 cms and one just superolateral to the former, measuring 4 x 3 cms. Wide bore needle aspiration from the later showed frank pus. Incision and drainage was done under local anaesthesia and 12 cc of pus was drained. Wick was kept in the abscess cavity. Daily dressing at local hospital was advised. He was to continue the same set of antibiotics.

One week after the incision and drainage, patient had marked relief in neck pain and neck movements returned back to normal. He was put on Ciprofloxacin and Tinidazole. Daily dressing at local hospital was advised.

Review after two weeks showed good healing of incision and drainage site, no pus collection. The patient’s complaint was hoarseness of voice. Laryngoscopy showed right vocal cord fixed in paramedian position. He was advised to continue Ciprofloxacin for another 10 days.

Follow-up after 6 months showed the same status of vocal cords and he was advised Type I Thyroplasty for the same.

DISCUSSION

Neck space infections are very rare and nowadays, knowledge of three spaces (retropharyngeal, lateral pharyngeal and submandibular) will allow management of 90% of patients.[2] The carotid space is adjacent to the oesophagus and trachea. It is bounded by the middle layer of deep cervical facia and includes the carotid sheath. Superiorly it is bounded by the hyoid and inferiorly it extends to the mediastinum.[3]

Infection in this space usually results from contamination as a result of trauma to the upper aerodigestive tract or secondary to infection from surgical procedures like thyroidectomy. Less common causes are laryngopyoceles, thymic cyst, branchiogenic cyst, thyroid cyst, thyroiditis and branchial arch anomalies. Secondary involvement of the space may occur by extension of infection from lateral pharyngeal space or retropharyngeal space or primary process in the lung or mediastinum.[10] The space can be infected directly by injection of drugs in intravenous drug abusers.[4,5]

Most of the neck space infections are polymicrobial. Recent studies of 64 cases by Dharambir, et al showed gram negative organisms from 26 of 34 positive cultures. No bacterial growth was seen in 22 cultures. Liberal use of antibiotics prior to admission and high dose of intravenous antibiotics prior to surgical drainage may have resulted in negative cultures. None of the anaerobic cultures yielded positive results, which may have been the result of technical limitations.[6]

Clinically, patients present with painfully enlarged neck mass. Most common symptoms are pain, swelling, dysphagia, fever, hoarseness and dyspnoea. Plain X-rays are valuable in diagnosing and managing neck abscesses. CT is invaluable as it accurately describes the anatomical diameter of the abscess, as seen by the following characteristics.

1. Single cystic or multi loculated appearance. 2. Low density

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CT scan number. 3. Air or fluid in the centre of the abscess. 4. Contrast enhancement of abscess wall. 5. Tissue oedema around the abscess wall. 6. Fascial spaces.

With this wealth of information, timely decision for surgical drainage is made.[7]

The complications include upper airway obstruction due to laryngeal oedema or extrinsic compression. Pneumothorax and pneumomediastinum are commonly seen. Vocal cord paralysis is the most commonly seen in carotid space infection. Horner’s syndrome and internal jugular thrombophlebitis are other potential complications. Additional neurological sequelae because of accidental injection to carotid artery, arterial occlusion or emboli can evolve to CVA or brain infarct in cases of intravenous drug abusers.[4] Spread of infection to mediastinum via the Lincoln highway is a cause of significant morbidity and mortality.[5,8]

The following principles are guidelines in the management of cervical infection:
1. Airway assurance. 2. Hemostasis without injury to vital structures. 3. Adequate exposure to avoid injury to vessels and nerves. 4. Proper placement of incision for drainage. 5. Gentle manipulation to avoid septicemia. 6. Minimal debridement[7] 7. Appropriate antibiotic covering gram positive, anaerobic, gram negative and β lactamase producing organisms should be selected for empirical therapy pending more specific culture sensitivity results.[7,9]

To conclude, the management of pus in the neck “continues to call for the surgeon’s best judgement and his best skills”, to use the words of Harris B Mosher. The ultimate result depends on adequacy of surgical drainage combined with appropriate usage of antimicrobials. The care of a patient with deep space infection of neck requires team approach to minimise complications and to offer successful outcome.

REFERENCES

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GOLDENHAR-GORLIN’S SYNDROME: A CASE REPORT

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ABSTRACT: Goldenhar syndrome, a term synonymously used with “oculo – auriculo-vertebral”[1] spectrum is a rare disorder that is apparent at birth. Described as early as 1950’s it was initially comprised of malformation of ears and ocular abnormalities, it was only in 1963 that vertebral abnormalities were included as signs of this syndrome. This work reports a case 12 year old male who presented in department of GMC with dysmorphic ears and on evaluation was found to have the classical signs of this syndrome. This case did not have the classical ocular findings. Also included is the current protocol for treatment of this syndrome.

Key Words: Deformity, anti convulsants, OAV