The Management of Acute Neck Infections

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THE prime consideration in the treatment of acute neck infections is the condition of the patient. It is imperative that his immediate general condition be considered while the exact diagnosis and specific treatment are being determined.

The length of the patient's illness, the cause of infection and the identity of the infecting organism are things the physician wishes to know. Likewise he must know whether the process is suppurative, non-suppurative, or vascular. These are the factors which determine how ill the patient is, but more frequently than not it is impossible to sum up all this data in the first few minutes. Therefore, the first two questions one asks in determining the measure of the patient's illness are:

1. Is the patient dyspneic? 2. Is the patient "septic"?

If the patient is breathing easily and displays no signs of severe sepsis, the physician may feel free to take more time in the evaluation.

IS THE PATIENT DYSPNEIC?

If the patient is having difficulty in breathing, he should not be left without competent medical care at hand nor without a tracheotomy set at the bedside.

The cause of the dyspnea is important: Is it suprahyoid, as in Ludwig's disease, or is it infrahyoid? If it is purely obstructive, a tracheotomy will relieve the patient; however, there are those who believe that the death of some of these patients is not due to asphyxia but to pressure upon, or irritation of, the carotid body. Whether this explanation is adequate cannot be said, but almost all physicians have seen patients with acute phlegmons or abscesses in the neck die suddenly without obstructed airways. Mediastinal extension must be kept in mind in cases of infrahyoid obstructions.

If trismus is not marked, cellulitis not massive, and dyspnea seems to be due to laryngeal obstruction, then a tracheotomy set should be kept at hand and the procedure performed when indicated. When the floor of the mouth is massively involved, however (as in Ludwig's disease), and there is a marked suprahyoid obstruction, one should not tarry long in incising the area of infection. Whether pus is obtained or not, the cellulitic area has been decompressed. This, the author believes to be important, although many take exception and hold that the procedure is a failure unless pus is liberated. It is true that one has a feeling of great satisfaction when pus spurts from the wound, but it should be remembered also that many patients progress rapidly to recovery even when pus is not obtained at incision.

The obstruction due to peritonsillar and to retropharyngeal disease is usually obvious. The possibility of a foreign body must be considered.

If there is marked trismus, but a good airway and a good voice, it is probably safe to spend more time on observation of the patient. Indirect laryngeal examination should always be tried. An adequate airway is essential.

IS THE PATIENT "SEPTIC"?

In using the term "septic," the author does not mean "toxic." The patient with a flushed, hot face, a full bounding pulse, even a profuse perspiration but with warm skin, as seen in acute fevers and in acute tonsillitis, is considered toxic.

In contradistinction, there is the patient who is pale, often ashen, who has a fast weak pulse and a cold clammy skin. This patient is considered "septic." The former appears healthy-sick; the latter, deathly sick.

If the patient's condition falls into the "septic" definition, a periphlebitic or an endophlebitic process must be considered and appropriate action taken. In periphlebitis there is suppuration adjacent to the vein; while endophlebitis may have resulted from a mild infection, the evidence of which has largely disappeared by the time the sepsis is apparent. One occasionally sees a patient in a quiet interim when he acts and looks and feels fine. If he has had any indication of chills and fever preceding examination, he should be kept under observation for at least ten days. Such patients sometimes develop septicemia.

The injudicious and excessive administration of sedatives or morphine is not only dangerous to the patient but very seriously confuses the clinical picture. It should be remembered that pallor and clamminess in a patient may be the result of loss of blood, and that the lost blood must be replaced. Shock, when present, must be combatted.

CLINICAL DIAGNOSIS

Having considered dyspnea and severe sepsis, and the immediate general condition of the patient, we may now raise our sights for longer range.

In dealing with acute neck infections, the history is most important. One should know the duration of the process and its development until first seen. The mode of origin—dental abscess, dental extraction, fracture of the jaw, tonsillar or peritonsillar infection, pharyngitis, salivary calculi, scalp infection, trauma, or other infections in this area—often gives a lead as to the location of the disease.

Certain areas of the neck are so frequently involved in cellulitic or suppurative processes, and present such characteristic signs and symptoms, that they have become individualized as spaces. Examples of these are the pharyngomaxillary and the mastica-

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tor. A knowledge of the anatomy, and of the characteristic clinical pictures produced, greatly facilitates a systematic examination, a differential diagnosis, and a rational treatment of patients with acute neck infections.

Pharyngomaxillary involvement is usually preceded by a pharyngeal infection or operation. There is trismus or difficulty in opening the mouth, tenderness and induration at the jaw angle, and displacement of the lateral pharyngeal wall toward the midline with little or no acute inflammation.

Masticator[3] disease is preceded by a history of dental infection. The trismus is usually more intense than in pharyngomaxillary infection, the pharyngeal swelling may be present, and the external swelling or induration is usually very intense. One encounters great resistance upon attempt to depress the posterior portion of the tongue on the affected side—a sign not present in pharyngomaxillary disease.

It must be borne in mind that trismus is a cardinal symptom of tetanus.

Because the term "Ludwig's" has become so firmly established, but often so loosely used, it is well to state what we consider as Ludwig's disease. We use the term to designate massive cellulitic invasion of the floor of the mouth which crowds the tongue to the palate and exerts such rapid and extensive pressure in all directions as to create one of the most dangerous and rapidly fatal processes occurring in the neck. The signs may be confined to the floor of the mouth, but more commonly the swelling is both above and below the mylohyoid diaphragm. Edema of the oral floor can be a symptom of lesser severity and the condition of the patient must be our guide.

Large submental swellings and indurations are usually processes involving lymph nodes, secondary to infections of the lower lip or chin, and are not to be confused with the serious picture of Ludwig's disease. Infection of the salivary glands, as well as acute inflammation of congenital cysts, are always considered. Superficial adenitis usually offers little difficulty.

Not infrequently one sees a patient with intense pain and induration in the area of the upper one-third of the sternomastoid muscle. There is marked torticollis, with the chin usually elevated, and often a temperature chart indicating sepsis. When the cause can be established, it is found to be a scalp or skin infection. Suppurative adenitis beneath the posterior border of the sternomastoid muscle produces the symptoms.

As disease does not always respect carefully described anatomical lines, the foregoing systematic outline serves us well in the process of diagnosis; and in the final analysis, the "pus is where you find it."

TREATMENT

Sulfonamides and penicillin have made a considerable change in the therapy and the prognosis of acute neck infections. If there is suppuration, incision and drainage is done, usually with the use of sulfonamides or penicillin before and afterwards. In the non-suppurative cases, or phlegmons, we try the sulfonamides and the penicillin for a week or more unless alarming symptoms intervene. These cellulitic processes respond readily, as a rule. The patients with purely phlebitis involvement, with chills and fever and a high leukocytosis receive the same intensive therapy. If the sepsis continues or metastases develop, ligation is required—and the therapy is continued.

In a few cases the disease does not respond to sulfonamides and penicillin. In such cases, the organism is probably a virus or, possibly, an anaerobe which is not sensitive to the drug used. The outcome depends upon the balance between the patient's resistance and the organism's virulence.

Arterial erosion from acute neck infections demands attention to the vessel or vessels involved. Furstenberg[2] said: "Several hemorrhages of increasing proportions presage the fatal loss of blood and emphasize the need of immediate surgical interference. The anticipation of such an accident calls for another life-saving measure, namely, ligation of the common carotid artery." The internal carotid is the artery most commonly eroded. Common carotid ligation sometimes fails to control the hemorrhage. In such cases, the bleeding is either directly from the external carotid, or a retrograde flow through the external into the internal carotid. Brownell[1] reported such a case a few years ago. The corrective procedure is to tie either the external or the internal carotid.

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REFERENCES

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