AN INAUGURAL DISSERTATION ON

Cynanche Trachealis

SUBMITTED TO THE
PRESIDENT, BOARD OF TRUSTEES AND MEDICAL FACULTY
OF THE
University of Nashville,
FOR THE DEGREE OF
DOCTOR OF MEDICINE.

BY
Ben. S. Wood

OF
Trenton, Kentucky

1857
JOHN YORK & CO.,
BOOKSELLERS AND STATIONERS,
NASHVILLE, TENN.
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Cynanche trachealis or Croup is a disease that should interest every physician on account of its distressing nature, its frequent fatality and the interesting class of patients who ordinarily are the subjects of its attack.

Croup, pathologically considered, is an inflammation of the secreting surface of the trachea, larynx, and bronchi; that is the true seat of the disease, but the inflammation not infrequently descends into the bronchi.

This disease is principally confined to children and is peculiarly a disease of early life. Though not confined to children exclusively, it occurs more frequent from the first to the fifth year, than all the remainder of life put together.
This may be owing to the changes that occur from diet, the majority of children being weaned within that period.

Croup, sometimes makes its appearance suddenly, and runs its course in a short time, but a large majority of cases come on gradually, and are slowly developed.

This disease has been divided by some writers into three stages, namely, Catarhal, developed, and Collapsed.

The first stage is common Catarhal, and should only be recognised as such.

The second stage is true, or developed Croup, and is generally preceded by the ordinary symptoms of Catarhal; the child sneezes, coughs, and is slightly hoarse; but if it is very young, you will not detect any hoarseness. In a few days symptoms peculiar to Croup begin to develop themselves; there is a slight difficulty of
breathing, gradually increasing to dangerous in-
spiration; a peculiar rough cough, resembling
the noise made by coughing through a brassen
trumpet. It is a ringing cough, and is followed
by a loud crowing inspiration.

Along with the above symptoms, there is
inflammatory fever, a flushed face, hot skin,
thirst, and a frequent hard pulse.

In the majority of cases, a thick mucus
is secreted by the mucous membrane of the
fauces, and larynx, which is a great obstacle
to easy inspiration. The sound attending res-
piration is at first rather clear, and is especially
so in the act of inspiration, but in the more
advanced period, it is characterised by a
squeezing sound, like air forced through a
narrow tube. Inspiration is always more dif-
ficult and laborsome than expiration.

As inflammation is developed, lymph
is poured out, of a tough semi-viscid appearance like that produced by boiling cream. This 
sedation of mumps may present different 
degrees of density; in some instances it consists 
of a tenacious mucus, blended with fibrin in 
various proportions; sometimes of a firm false 
membrane of considerable thickness, extending 
not infrequently throughout the greater por-
tion of the air passages; but the degree of 
density of the plastic exudation will depend 
upon the intensity of the inflammation.

As the disease advances, this glutinous 
secretion becomes more condensed, and moulded 
into a false membrane, and the developed stage 
has fairly set in, and it is at this stage of the 
disease that the practitioners is generally called 
to see the little patient.

The source of that peculiar exudation 
in mumps, is an effusion from the diseased
follicles of the tonsils, larynx, and trachea.

The tonsillar glands are composed almost entirely of an aggregated mass of follicles enveloped in fields of mucous membrane, and the lining membrane of the larynx is studded with mucous follicles. These glands are very numerous about the inferior vocal cords within the vestibule of the larynx. The lining membrane of the trachea is still more abundantly supplied than the larynx. Wherever these glands are most numerous, their, ceacies paribus, will the albuminous exudation be the most abundant by poured out in the inflammation of croup, and the adventitious membrane will be the densest, and the most perfectly formed.

The fluid secreted by the mucous follicles of the air tubes being intended to lubricate these passages, is, in the normal condition of the glands, bland, and transparent, not abundant in
quantity, and possesses no qualities of an acid or adherent nature. It consists, according to microscopic observations, of water combined with a viscous substance which is termed "mucus," and which constitutes about five per cent of the whole amount.

The membranaceous exudation which is found coating the inflamed mucous surface of the parts in cough, is an exudation not from the membrane itself, but is secreted by the muciferous glands which are abundantly situated in the larynx, trachea, and trachea.

Croup is not contagious, but it is found existing at the same time, or in quick succession, in more than one child of the same family. It frequently occurs epidemically, but sometimes appears to be endemic.

Children located in low and damp situations are more subject to this disease than those
in upland districts. In some instances the predisposition to whooping seems to be congenital, for it is well known that the children of some families are peculiarly predisposed to it, whilst in others it seldom makes its appearance.

Causes. The most common cause, is exposure to cold moist atmosphere; but, the peculiarities of childhood, such as, dentition, the condition of the glottis, and larynx, has been assigned a cause. The universal custom of clothing children with their necks and upper portion of the chest exposed, cannot fail to render them more subject to the influence of cold and its consequences.

It occurs more frequently in Spring and Autumn than any other season.

Diagnosis. Cynanche trachealis generally follows an ordinary catarrhal, coming on gradually; sometimes, but not very often, the
Symptoms make their appearance suddenly, and in these cases, we are apt to have spasmodic action of epiglottis; such cases are denominated by some, "Spasmodic Croup." When weak and intractable children become the subjects of this disease, we then have the Spasmodic variety.

The structure of the glottis which attends this form of the malady, is spasm caused by the inflammation occurring in children of a weak and nervous temperament. The majority of cases come on gradually, the little patient has a cold; some hoarseness, and a dry hard cough for several days; at night, he becomes restless; or, he may fall asleep and wake up in the night with hot skin, oppressed and stolidous respiration, the tonsils and pharynx covered with albuminous exudation; Pulse generally frequent, full and tense. The voice often gruff, and sometimes a total loss of speech.
The stage of Collapse has come on when
the symptoms gradually and steadily grow worse;
the obstruction of the passage of air increases;
the blood ceases to be well arterialized; the
skin becomes dusky; the pulse full and irregular
the extremities cold; the cough becomes weak
and husky; the breathing more oppressed, with
loud crowing inspirations; the nostrils in per-
petual motion; the head thrown back; the face
pale and livid; drowsiness comes on, some tossing
of the arms; the breathing becomes gasping and
interrupted; and the child dies.

Life is destroyed in pure circumscribed
trachealis, by the accumulation in the windpipe
of that concreted membrane-like substance which
gives to this disease its peculiarities.

In cases of recovery, this febrinous exudation
has been excreted in the form of a newly
formed tube, representing a cast of the trachea.
At other times, it has been coughed up in flat or tubular fragments.

**Prognosis.** Sympathetic tracheitis should always be regarded as very dangerous. It has been said that one-half of the children attacked by this disease die; but, under the present pathology and treatment, the mortality is not so great.

**Treatment.** The principal remedies in this disease are, bloodletting, emetics, counter-irritants, and calomel.

Bloodletting timely and judiciously employed, is a powerful remedy, and often produces the happiest results. Whencopd attacks pleuritic children in a high degree of vascular excitement, bloodletting in the access of the disease is the most efficient means of preventing the formation of a false membrane.

No definite rule can be given as regards
the quantity to be drawn, but a vein should be opened, and the blood allowed to flow until some compression is made upon the system; but if the child is young or delicate, cups or leeches may be used.

Children do not bear a repetition of bloodletting; they soon become emaciated; after one sufficient bleeding, no matter by what means accomplished, we should resort to other remedies.

Emetics, and tepid baths should follow bloodletting; the patient may be put in the bath, and an emetic administered whilst in it.

Tartarized Antimony is the best article for this purpose; this medicine has a powerful influence over inflamed mucous tissues. It may be given in solution; one grain dissolved in an ounce of warm water, and sweetened when cold; a desert spoonful of this may be given every ten or fifteen minutes until vomiting is produced.
Tartarized Antimony should never be given to children under one year of age, nor should it be long continued in older children, for it is a direct sedative, and sometimes produces inanition to excess.

Succus amarae, or Sulphate of zinc and ipecac, is a very good emetic after tartar has been used.

Ten grains of the sulphate of zinc, with twenty grains of ipecac dissolved in four ounces of tepid water makes an excellent emetic. A dessert spoonful of this may be given every five minutes until vomiting ensues.

After full vomiting, or bloodletting if necessary and the tepid bath, we must commence the use of mercury, or, mercury and ipecac combined.

Of all mercurial preparations Colomel undoubtedly is the best for internal administration.
We should endeavour to obtain the early constitutional effects of Calomel, for it has a powerful antiphlogistic tendency, but we must always watch its effects, and take care never to salivate a child seriously.

From three to eight grains of calomel according to the age of the patient and the urgency of the case may be given, either alone, or combined with ipecac; when administered with ipecac, the peculiar nausea which is produced has a very happy effect. We frequently have to continue this remedy in three or four grain doses repeated every two or four hours until its effects is produced upon the system.

If the breathing continues oppressed, and difficult, an emetic should be given between the doses of Calomel.
Counter-irritants are also of some value in this disease, and should be applied early.

Blisters, ammonia, and hot turpentine are among the best; a cloth wrung out of boiling water and rolled up in dry flannel will answer a very good purpose applied over the region of the sternum and trachea.

Various other means and medicines have been advised and employed in the treatment of croup. Hydrocyanic-acid has been highly recommended by some, but it will only be found beneficial in the latter stage of the disease in allaying cough and restlessness. Polygala Senega is also a good remedy in the latter stage of croup when the inflammatory symptoms have been subdued and a dry hoarse cough remains.

Nitrate of silver applied to the foreheads is a very valuable remedy. The careful ac—
-knowledges its efficiency in the treatment of
most of the diseases of the air passages. A
solution of this acid is the best mode of ap-
plying it; it does not act by burning, or, des-
truction of the textural matter, but it forms
immediately an union with the albumen and
other secretions of the mucous membrane, and
at the same time produces a favorable change
in the vital action of the parts.

When you visit a case of croup, the
first remedy to be resorted to, is, as before
stated, bloodletting, then your emetics and
tepid bath, and after the emetic has been
taken some five or ten minutes, follow it
with the application of a solution of nitrate
of silver to the tonsillary and faucial regions.

This will produce immediate vomiting,
and if the emetic and application of the nitrate
of silver is repeated as above, they may arrest
the further progress of the exudating inflammation.

The crystals of the nitrate of silver should be used, the strength of the solution may vary according to the urgency of the case, and the degree of inflammation: from five to twenty grains to the ounce of water.

Alum, when emetics have to be frequently repeated is highly spoken of by some and relied upon throughout the treatment.

The patient's diet should consist of mild mucilaginous fluid, in small portions at a time.

Tracheotomy has been suggested and practiced by some as the last resource in Camp, while others contend it should only be resorted to before effusion has taken place in the trachea.

The subject of tracheotomy in Camp...
is certainly one of considerable interest, and
that it may save life when timely performed
we have most unquestionable evidence.

Having now portrayed in as concise
a manner as possible the different phases
assumed by Cynanche trachealis, and the
method of treatment which I am disposed
to adopt should I be called upon to combat
this distressing disease, I beg most respect-
fully to submit this dissertation to you for
approval.