

AN  
INAUGURAL DISSERTATION

ON

*Cynanche Trachealis*

SUBMITTED TO THE

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FOR THE DEGREE OF

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Kentucky*



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## Corynache Trachealis

Corynache 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 larynx, larynx, and trachea; that is the true seat of the disease, but the inflammation not unfrequently 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, Catarrhal, developed, and collapsed.

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

The second stage is true, or developed croup, and is generally preceded by the ordinary symptoms of catarrh; 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 sonorous in-  
-spiration; a peculiar rough cough, resembling  
the noise made by coughing through a brass  
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 respiration. 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  
wheezing sound, like air forced through a  
narrow tube. Inspiration is always more dif-  
-ficult and laborious than expiration

As inflammation is developed, lymph

is poured out, of a tough semi-viscid appearance like that produced by boiling cream. This exudation of croup 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 unfrequently throughout the greater portion 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 practitioner is generally called to see the little patient.

The source of that peculiar exudation in Croup, is an effusion from the diseased

follicles of the tonsils, larynx, and trachea.

The tonsillary glands are composed almost entirely of an aggregated mass of follicles enveloped in folds of mucous membrane, and the lining membrane of the larynx is studded with mucous follicles. These glands are very numerous about the superior vocal cords within the ventricles of the larynx. The lining membrane of the trachea is still more abundantly supplied than the larynx. Wherever these glands are most numerous, there, ceteris paribus, will the albuminous exudation be the most abundantly 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 acrid or adherent nature. It consists, according to microscopic observations, of water combined with a viscid substance which is termed 'mucus', and which constitutes about five per cent of the whole amount.

The membranaceous concretion which is found coating the inflamed mucous surface of the parts in croup, is an exudation not from the membrane itself, but is secreted by the muciferous glands which so abundantly stud the larynx, 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 sporadically, 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 croup 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 catarrh, 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  
irritable children become the subjects of this  
disease, we then have the spasmodic variety.

The stricture 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 stridulous 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 nostils in perpetual 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 expectorated in the form of a newly perfect tube, representing a cast of the trachea.

at other times, it has been coughed up in flat  
or tubular fragments.

Prognosis. Cynanche trachealis 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 path-  
-ology 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 pro-  
-duces the happiest results. When Croup attacks  
plethoric children in a high degree of vascular  
excitement, bloodletting in the access of the  
disease is the most efficient means of pre-  
-venting 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 impression 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 irritable; 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 dessert 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 inaction to excess.

Spicucuanha, 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 Calomel undoubtedly is the best for internal administration.

- two in croup

We should endeavour to obtain the early constitutional effects of Calomel, for it has a powerful antiphlogestic 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 alluring 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 fauces is a very valuable remedy. The world ac-



- knows its efficiency in the treatment of most of the diseases of the air passages. A solution of this acid is the best mode of applying it; it does not act by burning, or destruction 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 favourable 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 fauces 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 exudatory 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 patients 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 croup, while others contend it should only be resorted to before effusion has taken place in the trachea

The subject of tracheotomy in croup

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-tachealis, and the method of treatment which I am disposed to adopt should I be called upon to combat this distressing disease; I beg most respectfully to submit this dissertation to you for approval.

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