

ACUTE INFLAMMATION OF THE THYROID GLAND

by

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INTRODUCTION.

While acting as house surgeon in Professor Annandale's wards in the Royal Infirmary, I met with two cases of the above somewhat rare affection. On looking up the standard books on Medicine and Surgery I found the subject practically unmentioned. It occurred to me that an extensive search in literature for notes and cases might well repay the trouble involved. Accordingly I have looked up the more important English, American, French and German medical journals of nearly a hundred years and have managed to collect a good deal of information on the subject.

I shall begin by describing the two cases which came under my own observation- with the kind permission of Mr. Annandale - and will then go on to a summary of the published cases. I have been able to collect the conclusions to be drawn from their perusal and, finally, a list of references arranged chronologically.

The first case is as follows:-

On the 26th of November, 1903, as I was coming out of the operating theatre, I saw a man remonstrating with a porter for bringing his daughter up to the ward as she was already dead. I saw her give a convulsive gasp/

gasp, however, and immediately got her into bed. At that moment Mr. Annandale came in and opened her trachea above the isthmus of the thyroid gland. A number 14 silver male catheter was then introduced and we took turns at sucking out the blood and mucus which were impeding the passage of air and after artificial respiration had been done for about twenty minutes, the patient recovered from her immediate danger of asphyxiation. A tracheotomy tube was then put in.

The history of the case before admission was :-
Annie W. aet. 15. Westcalder.

Recommended by Dr. Young.

She first complained of enlargement of the thyroid in 1901 + 2 years before admission. Until about ten days before she was sent to hospital, there were no symptoms, but then she suddenly began to suffer from difficulty in breathing and swallowing.

She had at the same time a cold with a certain amount of laryngitis. The thyroid gland began to enlarge rapidly and continuously, and the doctor in charge considered it advisable to send her into hospital to be under the care of Mr. Annandale. On her way in, she collapsed and it was only the timely performance of tracheotomy which saved her life.

On/

On admission to hospital the goitre was found to be of huge size, being enlarged in all three parts and extending right down to the manubrium sterni. It was tender on pressure and painful but there was no reddening of the skin. It followed the movements of the larynx on deglutition.

The attack lasted about fifteen days with an evening rise of temperature varying from 101.8°F. to 103.2°F. and a morning fall varying from normal to 100.6°F. There was at first a great deal of trouble with the tube, partly owing to the large size of the tumour and partly to the amount of mucopurulent material which collected ⁱⁿ it. The latter was best controlled by the frequent use of a spray consisting of bicarbonate of soda grs. XX to $\frac{3}{4}$ I. of water but, in spite of this, sucking through a rubber tube had to be resorted to more than once to prevent asphyxiation. After a few days a long tube which had been specially made was inserted and this acted much better.

When the temperature returned to normal, the pain rapidly disappeared, the dyspnoea and dysphagia got less and the thyroid swelling began to decrease rapidly. She was altogether six weeks in bed but this was largely due to the complication of pulmonary tuberculosis./

tuberculosis.

(There was consolidation of part of the right base and also signs of chronic broncho-pneumonia. The family history of tubercle was well marked and she had a sister suffering from a tubercular wrist).

Diagnosis:- Acute strumitis following an attack of bronchitis and laryngitis.

Treatment:- Immediate tracheotomy.
Fomentations locally.
Whisky and strychnine internally.
Spray of bicarbonate of soda for tube.
Bronchitis kettle and tent.

Progress:-

Five and a half weeks after admission, the tracheotomy tube was removed. In the eighth week she was dismissed. The goitre had resumed its normal size and except for the chronic lung condition she was quite cured.

I heard of her lately from Dr. Young and he tells me that ^{as} the result of open air and good feeding she is doing very well. The goitre is of the same size as two years ago and has given no further trouble.

CASE II.

The second case was one of acute inflammation, occurring in a previously healthy gland, or, of Acute Thyroiditis as opposed to Acute Strumitis exemplified by the preceding case.

Annie Walker. aet 16.

Recommended by:-Dr. Dawson, Buckhaven, Fife.

Admitted:- June 15th 1904.

Complaint:- Painful swelling in the neck.

History:-

About six weeks before her admission to hospital, the patient had a croupy cough about which she consulted her doctor. A week later she began to have difficulty in breathing, and her medical man recommended poultices to the throat and inhalations of steam. For five weeks the difficulty in breathing continued but it was not until the mother had been applying the poultices for some time that she noticed a swelling on the neck. This swelling increased at such an alarming rate and was accompanied by so much dyspnoea that the patient was sent to hospital so that she could be under constant supervision.

Previous Health :-

She had measles and influenza as a child and an occasional sore throat with swelling of the cervical/

cervical glands.

Family History :- Excellent.

State on admission:-

The thyroid gland was very much enlarged all over, extending down behind the manubrium sterni. The consistence of the sternum which moved with the larynx was firm and elastic. There was tenderness but no fluctuation. The skin was somewhat red. The veins over the tumour and neck were swollen. Dyspnoea was great, especially during the early hours of the morning, and orthopnoea was present. There was slight dysphagia. Very little fever.

Progress:-

The tumour continued to increase and the breathing became more and more embarrassed - so much so that on one or two occasions she was nearly asphyxiated. After palliative treatment for ten days, Mr. Amundale decided to operate.

Treatment and Progress:-

The patient was given chloroform and an incision made in the middle line of the neck. On exposure, the depressors of the hyoid bone were found to be swollen and hard evidently from infiltration/

infiltration of some sort. Having removed a piece of muscle for examination and considering the case to be one of rapidly growing malignant disease, Mr. Annandale decided to divide the isthmus with the cautery to alleviate the distressed breathing. At this stage the patient collapsed and artificial respiration had to be kept up for about twenty minutes. Ether and strychnine were given hypodermically. After division of the isthmus the trachea was found to be very much displaced to one side and flattened and it was only with very great difficulty that a tracheotomy, which was evidently absolutely necessary, could be performed. The long tube which had been specially made for the previous case was also employed in this one.

On the night of the operation the temperature went up to 102°F . as was to be expected from the manipulation of the gland. It remained high until the morning of the fifth day when it came down to normal, rising again in the evening to 101.5°F . On the sixth morning it again came down to normal and did not again exceed 99°F .

When the temperature came down, the pain and swelling also began to decrease and the breathing - which had already been much relieved by the tube - became still easier. In a few days, all the symptoms/

symptoms including the swelling had disappeared. Three weeks after the tracheotomy she was sent home with the wound in her neck nicely healed and except for the scar, no sign of her trouble left.

On examination of the ^{piece of} muscle removed, the infiltration was found to be merely leucocytic.

Diagnosis:- Acute Thyroiditis following a cold.

Result :- Absolute recovery.

Subsequent History:-

The patient was again under Professor Annandale's charge in November 1905, when he removed her right ovary for lympho-sarcoma. She made an uninterrupted recovery. The thyroid gland was apparently quite healthy and there was only a slight scar left by the tracheotomy wound.

I now give a summary and analysis of 93 other cases which have been published.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result.
1.	M.	39	Typhoid at 20.	Swelling, tenderness, fever, pain, dyspnoea, disphagia. Thyroid the size of male fist.	?	3 iv. pus evacuated.	Cure with slight in-duration.
2.	F.	45	Goitre all her life.	Dyspepsia. Swelling in neck doubled in size. Disphagia, Dyspnoea, nasal voice. Pulse 120, irregular, Larynx & Trachea displaced to the left. Fluctuation in upper & posterior part. Fixed. Oedema of skin.	two months	Pus evacuated. Washed with iron alum.	Cure of acute condition Sinus left.
3.	F.	23	Acute Rheumatism	Sudden onset of pain. Temp. 105.3 F. Swelling in neck. Disphagia. Dyspnoea Tense. Fluctuating, Tender, Fixed. Pulse 140 soft & small.	two months	Leeches & internally Tinct. Ferri Perchloride.	Complete cure.
4.	F.	37	Goitre from first pregnancy 11 years before. Unaffected by other 5. Pneumonia.	During convalescence from pneumonia was seized with pain in the thyroid gland & signs of abscess formation. Fever. Disphagia & dyspnoea.	?	3 iv. pus were evacuated.	Cure of acute condition.
5.	F.	50	None	Acute enlargement of thyroid to size of a cocoonut. Pain especially at night. Suppuration after iodine injection.	?	Evacuation of a tea-cupful of pus.	Cure
6.	F.	26	Chill fifteenth day after confinement.	Pain & swelling in right lobe. Head in attitude to relieve pressure. Great disphagia Slight dyspnoea. Pulse 112. Swelling hard & elastic and moveable. Left side healthy.	Seven days	Mercury inunctions & frequent cataplasms	Cure
7.	M.	25	Malaria	Violent sudden pain in neck. Fever. Dyspnoea. Disphagia. Difficulty in speaking. Tumour down to right clavicle. Firm, elastic, red & painful. Temp. 58.60C.	?	Sulphate of quinine.	Cure

No.	Sex	Age	Previous illnesses	Symptoms	Duration	Treatment	Result.
8.	F.	Old	Malaria	Gradual enlargement of thyroid.	?	Sulphate of Quinine	Cure.
9.	F.	young	Exposure to cold.	Pain in neck. Disphagia. On seventh day swelling in neck. Tenth day typical goitrous enlargement.	three weeks.	?	Cure.
10.	M.	?	Neuralgia	Swelling in thyroid. Pain. Redness. Pulse 130. Temp. 102.50F. On eleventh day, fluctuation.	18 days.	Evacuation of pus 3i.	Cure.
11.	F.	40	Influenza	Pain, disphagia, fever, swelling of neck. Right lobe of thyroid as large as a hen's egg. Left lobe less.	10 days.	Unguentum—Bella-donna, Antipyrine Purgatives.	Cure
12.	M.	3.	Erythema. Nodosum.	Pain. Slight fever & swelling of thyroid moving with deglutition. Temp. 101.0F. Later the swelling increased. Disphagia. Fever greater in evenings than mornings.	28 days.	Purgatives, Quinine Fomentations.	Cure.
13.	M.	20	Congenital syphilis Ozoena.	Symptoms of acute thyroiditis but never febrile.	?	Treatment of Ozoena.	Cure.
14.	M.	young	Hospital throat.	Symptoms of acute thyroiditis.	?	?	Cure.
15.	F.	young	Repeated acute & subacute rheumatism. Erythema.	Sudden onset of swelling & pain in thyroid. Tenderness & pyrexia for two days. Swelling lasting seven to ten days.	10 days	?	Cure.
16.	?	?	Acute rheumatism	Symptoms of acute thyroiditis.	?	?	Cure.
17.	?	?	do. do.	do. do.	?	?	Cure.
18.	?	?	do. do.	do. do.	?	?	Cure

No.	Sex	Age	Previous illnesses.	Symptoms.		Duration	Treatment	Result.
19.	?	?	Acute rheumatism	Symptoms of acute thyroiditis		?	?	Cure.
20.	?	?	Ague	do.	do.	?	Quinine	Cure.
21.	?	?	do.	do.	do.	?	do.	Cure.
22.	F.	18	Diphtheria	Sudden onset of pain & swelling in the thyroid gland which got swollen to the size of a hen's egg, red & tender. Temp. 39.7°C. Pulse fast. Hoarse. Great dysphagia & dyspnoea. Finally fluctuation.		?	Cataplasms. Evacuation of pus & drainage.	Cure.
23.	F.	32	Diphtheria	On eighth day sudden pain in gland. Great dyspnoea. Temp. 39 to 39.7°C. Swallowing impossible.		?	Anti-diphtheritic & leeches.	Cure.
24.	F.	39	Measles in childhood. Eight con- finements. goitre.	Goitre began at seventh pregnancy & increased at eighth. Sudden onset of great dyspnoea, pulse very feeble.		six weeks	Evacuation of pus & drainage.	Cure.
25.	M.	30	Slight goitre.	Crushed thumb. Pyoemia. Increase in goitre		three weeks	?	death.
26.	F.	young	None.	Numerous acute abscesses of thyroid.		?	Incision & scraping	Cure.
27.	M.	23	Scrofula from childhood	Fever. Pain in thyroid, dyspnoea. (Post Mortem) Posterior perforation of abscess with collection of pus round bifurcation of trachea, down into mediastinum, thinning jugular vein.		14 days.	Tracheotomy	Death.
28.	?	?	?	Abscess extending into floor of mouth.				
30.	?	?	?	Erosion of common carotid				

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration.	Treatment	Result.
31.	F.	Young	Goitre. Grave's disease. Erysipelas.	Erysipelas brought on strumitis which lead to abscess formation with rupture externally and cure of all previous symptoms.	?	?	Cure.
32.	?	?	Hepatic Abscess.	Large abscess with goitre in centre. Septic and had ruptured.			Death (P.M.)
33.	?	?	Acute Osteomyelitis.	Acute suppuration of struma with tetanic spasms.			Death.
34.	?	?	Do.	do.			do.
35.	M.	40	None	Sudden attack with rigors, sweats, dysphagia, thoracic pain, thyroid swelling, skin reddened, sensitive to pressure. Fever, thirst, rapid pulse.	Ten days	Evacuation of pus 3 vii.	Cure.
36.	F.	39	Cystic struma. Electrical treatment.	Sudden enlargement. Great pain, dyspnoea, cyanosis fever.	?	Puncture (Blood only)	Gradual recovery.
37.	M.	24	Cystic struma.	Tumour almost size of fist pressing on trachea, fluctuating with rounded apex. No fever. Digestion disordered.	Two months	Evacuation of pus.	Cure.
38.	M.	?	Parental struma treated for 15 months with iodine & alcohol injections	Got a chill which gave abdominal symptoms like typhoid, then on sixth day swelling of the thyroid was noticed with very little pain at first. Then swelling got painful, red, elastic & tympanitic.	?	Incision to let out pus, gangrenous matter and gas.	Death from septicæmia, gangrene, etc. four days after operation.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result.
39	M.	25	Struma since 18.	Suddenly attacked with headache, loss of appetite, fever, diarrhoea and in a week, noticed increasing swelling in the neck. There was a large diffuse swelling of the thyroid, tender & fluctuating. Larynx displaced to right (Cyst wall was calcareous in places).	Five weeks.	Incision to let out pus.	Cure.
40.	M.	26	Symptoms of typhoid in August. Struma pre-existing.	In September struma was seen to increase in size, get tender, cause dysphagia, evening rise of temperature. Later there was marked oedema & reddening of the skin.	Four weeks.	Evacuation of stinking pus.	Cure.
41.	F.	35	Struma since marriage. Placenta proevia, much haemorrhage. child still-born. Evil smelling lochia.	On third day after delivery had a suffocative attack, with dysphagia, tenderness in struma, fever, signs of local inflammation in thyroid. Swelling of thyroid soft extending from lower jaw right over clavicle tympanitic and crepitant.	Four weeks.	Evacuation of pus by syringe and later incisions.	Cure with total disappearance of struma.
42.	F.	14	Struma for 5 Years.	Great dyspnoea. Sinus in front of right sterno mastoid leading to large cystic goitre.	?	Division of isthmus. Lower tracheotomy. Cyst opened & scraped & pus evacuated.	Posterior perforation. Death from septic pneumonia.
43.	M.	mid-dle age.	Severe colloid goitre for six months.	Symptoms of purulent strumitis with dyspnoea, cyanosis. $\frac{1}{2}$ pt. of pus was aspirated. Next day the opening was blocked & fresh cyanosis & swelling took place with perforation of the oesophagus or more properly of the pharynx below the right tonsil. A quart of pus was squeezed out by pressure on the tumour.	Few days.	Aspiration pressure.	Hard lumps left with cyanosis & dyspnoea on exertion.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result.
44	F.	27	Goitre.	Iodine injections brought on pus formation. Perforation into oesophagus took place & pus continued to come for some weeks with hectic symptoms.	Some weeks	?	Perforation closed slowly Dispnoea left No dysphagia.
45.	F.	47	Goitre scarcely perceptible but of longstanding. Pneumonia.	After pneumonia, goitre suddenly reappeared, got larger, painful & finally signs of abscess formation appeared. Grew to the size of an orange. Fluctuated. Fixed in deeper part, moved with hyoid bone.	?	Evacuation of pus which showed undoubted pneumococci.	Cure.
46.	F.	22	Goitre puerperium.	Goitre suddenly increased & got septic.	18 days.	Ice applications	Rupture into throat. Cure.
47.	F.	30	Nervous Crisis.	Sudden attack of pain in subhyoid region with attacks of dyspnoea. Tumour noticed in same region, rapidly increasing, high colour. Spoke with difficulty. Swelling reached left clavicle. Did not cross middle line. Got red, elastic & tender. Moved with larynx. Pulse fast. Nausea & loss of appetite.	18 days.	Leeches and poultices.	Cure.
48.	F.	35	None	Severe pain in thyroid & then in a few days swelling was noticed. Increased quickly. Dyspnoea, Tender. Right lobe of thyroid swollen & inflamed. Skin stretched & shiny. Moved with swallowing. Size of hen's egg. Fever. Loss of appetite.	six weeks.	Leeches. Blister (Erysipelas) Evacuation of pus.	Cure.
49.	F.	20	Worms.	Noticed swelling in neck with severe pain, giddiness, & shivering. Then dyspnoea from increase in tumour. Left lobe more enlarged than right. Painful to touch.	?	Leeches and compresses.	Cure.
50.	M.	25	None	Noticed small slowly increasing tumour in thyroid which grew painful and tender.	Two months.	Evacuation of pus	Cure.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result.
51.	F.	29	Giotre for 15 years.	For some months had had headaches & then abscess formed in right lobe of thyroid with throbbing in neck & spasmodic contractions of face.	?	Evacuation of pus	Cure.
52.	M.	21	Swelling in thyroid a few months before cured by iodine. Chill.	Pain in neck returned & the right lobe of the thyroid got as large as two fists. Fresh attack increased dyspnoea & dysphagia. Got very wasted. Swelling increased and went right down over manubrium sterni. Larynx & trachea very much displaced to left. Great dyspnoea.	?	None	Death (P.M.) Cystic septic struma.
53.	M.	young	Croupous pneumonia.	After recovery from croupous pneumonia fresh rise of temperature with swelling & fluctuation in right lobe of thyroid.	Few days.	Incisions.	Pus with very virulent pneumococci evacuated. Cure.
54.	M.	49	Pneumonia.	Two days after crisis a tumour in neck appeared, with pain & a fresh rise of temperature, swelling & fluctuation in the left lobe of the thyroid.	?	Puncture & evacuation of pneumococcal pus.	Cure.
55.	F.	26	Struma since age of twelve	Struma became swollen & tender, dyspnoea set in; skin tender. Sterno-mastoid shoved up; the carotid back & larynx very much to the left. Right lobe hard. Left lobe softer & more tender.	?	Excision of right lobe which had 2 large cysts full of pus containing B. Typhosus.	Cure.
56.	F.	31	Struma since a child increasing before birth of each child. Decreasing after.	After last confinement struma increased. Sudden rigor; thyroid swelling, pain especially in left side. Skin red. Swelling hard, with an uneven surface, extending to manubrium sterni. Moved with larynx.	?	Excision.	Uneventful recovery. Pathology. cystic goitre with colloid degeneration & abscesses with streptococci.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result
57.	F.	43	Erysipelas.	Laryngeal trouble & difficulty in coughing & swallowing. Fever. Swelling in both lobes of thyroid, which was also painful, tender, red, fluctuating.	About 28 days.	Incision & evacuation of streptococcal pus.	Cure.
58.	F.	67	Croupous Pneumonia.	Three weeks after convalescent, pain & swelling in right lobe of thyroid. In six weeks an abscess developed with the usual symptoms.	56 days.	Evacuation of pus	Cure. <u>Pathology.</u> Virulent pneumococci found.
59.	F.	29	Goitre for nine years. Croupous Pneumonia.	After crisis, headache & swelling of the goitre set in; slow for 6-8 weeks, then rapid. No fever. Tumour from hyoid to sternum. Moves with larynx. Red.	?	Incision and drainage.	Cure. <u>Pathology.</u> Pneumococci found.
60.	M.	52	Struma.	Increase in tumour. Pain. Restlessness. Fever. 39.5°C. Weakness. Delirium. No dyspnoea till near end of illness. Rapid pulse & respiration. Rigors.	21 days.	Evacuation of pus and pieces of lime. Pneumococci found in pus.	Death P.M. Malignant disease of aorta & endocarditis. Tumour of left kidney. Enlarged spleen.
61.	F.	20	Very slight struma. Typhoid fever	A month after typhoid set in, swelling began in the thyroid, with huskiness, pain in head and shoulders. Fever. Rapid pulse. Rigors. Swelling greatest in right lobe, hard, no fluctuation, dysphagia.	?	Evacuation of pus	Cure.
62.	F.	37	Grave's Disease for 7 years. Pneumonia.	At end of pneumonia was attacked with acute strumitis with dysphagia, orthopnoea. Head kept forward.	9 days	Warm compresses.	Cure.
63.	F.	16	Parenchymatous Goitre. Angina.	Towards end of attack, goitre suddenly swelled and became sensitive to pressure. Violent dyspnoea.	?	Incision (no pus)	Recovery

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result.
64.	F.	38	Angina.	Slight swelling of thyroid gland.	?	Sodae Salicyllas	Cure.
65.	F.	35	Acute rheumatism	Slight diffuse painful swelling of whole of thyroid gland. Rather red. Sensitive. No fluctuation.	?	Sodae Salicyllas	Cure with slight permanent enlargement.
66.	F.	40	None. No other disease discovered	Sudden malaise. Disphagia. Pain in left ear & lower jaw. Fever. Rapid pulse. Diffuse swelling of left lobe of thyroid. Right lobe rather sensitive to pressure.	?	Compresses. Excision of left lobe.	Cure. <u>Pathology.</u> Slight infiltration. No pus. Proliferation of epithelial cells. Immigration of leucocytes. Atrophy of colloid.
67.	M.	$\frac{14}{12}$	Adenoids.	Swelling in neck the size of a walnut. An abscess formed in the thyroid gland.	14 days.	Surgical	Cure
68.	F.	?	Goitre. Typhoid.	In 8th week, had a relapse. Goitre got painful and red and an exploratory puncture drew off greenish pus with Eberth's bacillus.	?	Puncture	Cure?
69.	M.	31	Syphilis with Potassium Iodide treatment.	Pain in pharynx & swelling of neck increasing daily with dyspnoea. Syphilitic papules were present on the tonsils and palatine arches. Thyroid got swollen to the size of a hen's egg, hard, moved with larynx, not painful. No fever. Got better on stopping iodide & beginning mercury. Got bad again on resuming iodide on two separate occasions. Iodism present but very slight.	?	Stopping Potassium Iodide.	Cure.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration.	Treatment	Result.
69.	F.	?	Influenza.	Painful swelling in neck, enlargement of right lobe of thyroid, hard & tender. Swelling extended to isthmus & down trachea. Fever. Slight dyspnoea & disphagia. Accompanied by catarrh of trachea, stridor and inability to cough.	?	Emetic	Cure with slight enlargement.
70.	M.	Mid.	Influenza.	Three days after influenza temperature had gone down, seized by pain in throat & dyspnoea. Fever, acute inflammatory enlargement of thyroid gland. Both lobes & isthmus affected. Moved with larynx.	three days.	Poultices, salicyllate of soda & iodide of potassium.	Cure with Slight enlargement of isthmus.
71.	F.	42	Influenza.	Pain in thyroid & sides of neck. Next day gland more enlarged. Skin tense & shiny. Disphagia marked & dyspnoea. After 54 hours from onset, pain left suddenly.	54 hours?	Fomentations. Potassium Iodide Quinine.	Cure with Slight permanent enlargement
72.	M.	62	Goitre for 8 years.	Goitre size of orange, displacing larynx & trachea to the side. Fluctuation.	56 days.	Incision & Evacuation of pus.	Improvement. Then secondary from ulceration of carotid. Death.
73.	F.	?	Septic Perimetritis & parotitis.	Inflammatory swelling of thyroid gland.	14 days.	?	Resolution.
74.	F.	?	Pregnancy, (7th month)	Inflammatory enlargement of thyroid gland, developing quickly causing dyspnoea & some fever. Maximum on 4th day, then at first quickly, and then slowly subsided.	? six days?	?	Cure.
75.	F.	?	Influenza. Double pneumonia.	Temperature kept up when pneumonia resolved & patient had disphagia. Right & middle lobe of thyroid got swollen & sensitive to pressure. Swelling increased over whole gland. Disphagia & dyspnoea supervened. Severe fever & dulness of mental faculties	?	12 leeches, then 8. quicksilver. Strophanthus.	Cure.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration.	Treatment	Result.
76.	F.	?	Typhoid fever.	During convalescence, lobe & isthmus of thyroid became swollen. Temperature over 39°C. Dysphagia but no dyspnoea.	Ten days.	?	Cure
77.	F.	32	Bleeding from genitals for 14 days.	Swelling of thyroid gland, dysphagia & dyspnoea. Accompanied by acute nephritis & pericarditis.	?	?	Cure.
78.	F.	young	In last week of pregnancy. With otherwise normal delivery.	Onset of fever which continued to increase, swelling of thyroid & parotids began on the 5th day. Slight dysphagia but no dyspnoea.	?	?	Death. (Diagnosis Typhoid)
79.	F.	13	(First menstruation)	Acute thyroiditis.	?	?	?
80.	M.	22	Cholera.	During convalescence was seized with fever, thirst, sickness, sleeplessness & swelling & tenderness & pain in thyroid gland. Loss of appetite.	?	Leeches & bleeding (A.D. 1849).	Cure.
81.	M.	30	Goitre.	Goitre became suddenly & enormously swollen, with accompanying fever & dysphagia. Fluctuation set in & then spontaneous rupture with immediate relief following.	?	?	Cure.
82.	M.	38	Goitre.	Sudden onset of chill with full pulse & headache. Rapid increase in size of Goitre with compression of neighbouring organs.	?	Leeches. Calomel. Unguentum. Potassii Iodide.	Cure.
83.	M.	60	Goitre	Under influence of a chill, Goitre suddenly increased & then got red & tender & sensitive to pressure. Pain on deglutition.	56 days.	Puncture every morning.	Escape of glary fluid & disappearance of Goitre.

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result
84.	M.	70	Enormous goitre.	Contracted strumitis. Ordinary septic symptoms.	56 days.	Evacuation of cysts	Cure of goitre.
85.	M.	?	Large goitre	Fever, headache, swelling of gland. Pain on deglutition increased. Fluctuation could be detected in middle lobe.	10 days	Low diet. Leeches. Ointment with iodide of lead. Iodide and bromide of potassium	Cure.
86.	M.	38	Chest trouble, iritis & gonorrhoea. Fissure in ano. Eczema. Erysipelas.	Erysipelas set in suddenly over whole face neck and head. Got very delirious. Ill for about a month. High temperature, tenderness of neck, deglutition almost impossible. Continuous cough. White frothy expectoration. Great hoarseness. During last fortnight of illness tenderness & difficulty in swallowing gradually got less & the swelling in thyroid gland gradually abated & the patient finally got quite better except for iritis which lasted two months.	About a month?	Ice, leeches, mercury ointment, etc.	Cure.
87.	M.	28	Goitre since infancy.	Inflammation set in 19 days before admission to military hospital. Tumour the size of a pear in left lobe of thyroid gland. Thyroid enlarged, hard, moved with trachea.	6 weeks	Evacuation of 200 grammes of pus.	Cure.
88.	F.	22	Exposure to cold on 15th day after delivery.	Right lobe of thyroid got swollen & deglutition got painful & respiration hurried. Fever. Loss of appetite. Tumour moderately hard, elastic, slightly mobile. Painful to pressure. At first, the symptoms increased, then were stationary for two days. About 6th day, pain lessened, tumour diminished and patient got sleep.	7 days	Cataplasms. Mercurial ointment. Cotton Wool.	Cure. Left lobe of thyroid became indurated.
89.	F.	?	None.	Dyspnoea & violent pain in anterior part of neck. Great swelling of whole thyroid gland. Severe headache and fever.	?	Leeches.	Resolution

No.	Sex	Age	Previous illnesses.	Symptoms.	Duration	Treatment	Result.
90.	M.	30	Not stated.	Violent dyspnoea. Great swelling of thyroid.	?	Leeches.	Resolution
91.	F.	27	Not stated.	Acute swelling of thyroid gland. High temperature, quick pulse.	Three weeks.	Hot fomentations. Sodae Salicyllas. Tinctura Bella-donnae.	Resolution
92.	F.	20	"Frequent Goitres." Typhoid fever.	During convalescence from typhoid, patient had feverish attack with swelling in thyroid gland. Skin red. False fluctuation.	?	Puncture.	Cure of attack with sinus formed.
93.	?	8	Diphtheria	Acute swelling of thyroid also present.	?	?	Death. no P.M.

ANALYSIS.

Males	32
Females	49
Unstated	12
TOTAL	<u>93</u>

AVERAGE AGE 32.97.

Under 10	3
10 and under 20	4
20 and under 30	21
30 and under 40	19
40 and under 50	8
50 and under 60	3
60 and under 70	3
70 and under 80	1
Unstated	<u>31</u>
	<u>93</u>

BETWEEN 20 and 40. 40

Goitrous	33
Non-goitrous	60
Suppurated	44
Of these- goitrous	28
non-goitrous	15
not stated	<u>1</u>
	<u>44</u>

Died	10
Of these there were septic	7

ETIOLOGY.

After Pneumonia	6
" Acute Rheumatism	7
" Angina	2
" Diphtheria	3
" Typhoid	6
" Malaria	4
" Puerperium	3
" Erysipelas	4
" Influenza	4

All the pneumonia cases suppurated.

" " typhoid	" "	but one
" " puerperal	" "	
" " erysipelas	" "	but one
Half the Diphtheria	" "	

Pus examined in 7 septic cases

Pneumococci in 4

Typhoid Bacillus in 2

Streptococcus in 1 (puerperal case)

Average duration in aseptic cases 13.79 days

" " in septic " 42.5 days.

ACUTE INFLAMMATION OF THE THYROID GLAND.

This is a very rare disease (Ewald)

It was spoken of by Marcus Aurelius as ending in septic goitre.

Petit collected three similar cases.

Frank described a septic goitre opened by a barber which left a fistula.

Lebert in 1862 published a monograph of 50 cases.

Bauchet in the same year published several cases.

It may be divided into

1. Acute Thyroiditis - when a gland which was previously healthy is attacked.
2. Acute Strumitis - in which the gland was already goitrous.

In the cases which I have collected, the latter condition obtains in 35.4%.

Acute Thyroiditis may occur as an epidemic e.g. Brisson reports one which occurred at St. Etienne in 1864 and Demme reports a more recent one at Berne which occurred in children who were already suffering from measles. French writers on military surgery have reported many epidemics in garrisons./

garrisons. Viry and Richard, who reported the Belfort epidemic in 1877 held that it had no relation to ordinary goitre, but belonged to ^{the} class of acute specifics. In this epidemic many of the cases seem to have lasted about 19 days and taken a month to convalesce.

It is a disease more common in women than in men. Of the 93 cases collected, 49 were females, 32 were males and the sex of the remaining 12 cases was not stated.

It is most common between the ages of 20 and 40. Of the cases collected, 40 were between these ages and the next most common period is from 40 to 50.

Etiology.

It is always due to an infection (Charcot Bouchard et Brissaud; Richardson etc.) According to Eiselberg a goitrous gland is more often attacked than a normal one, but of the 93 cases above tabulated it will be noticed that only 33 were previously goitrous.

James Berry holds that in goitre acute inflammation is most often due to operation e.g. 9 out of 24 cases reported by Kocher were due to this cause.

Predisposing Causes are:-/

Predisposing Causes are:-

Goitre.

Trauma.

Cold.

Congestion from circulation (e.g. shouting;
labour). (Richardson)

Pyæmia.

Purulent Affections (post-operative etc.)

Secondary lesion in infectious diseases.

Exposure to severe changes of temperature (Lücke)

Diseases which may produce it are - in order of
frequency:-

Acute Rheumatism.

Typhoid Fever.

Pneumonia.

Malaria.

Erysipelas.

Influenza.

Diphtheria.

Puerperal disease.

Angina.

Eruptive Fevers.

Scarlet Fever.

Measles.

Smallpox.

It/

It has also been observed to follow:-

Bronchitis.

Pharyngitis.

Coryza.

Diseases of the digestive tract.

Catarrh of stomach.

Acute enteritis.

Proctitis.

Osteomyelitis.

Parotitis. (Charcot, Bouchard and Brissaud)

Erythema Nodosum. (Barlow).

Cholera. (Berry)

A case is also on record where it was proved to occur as the direct result of the administration of Iodide of Potassium.

MORBID ANATOMY.

In the Non suppurative form, Richardson says that the following conditions are met with.

Tissue much congested.

Colour dark red.

Dotted with small haemorrhages.

Pigment degeneration of cells.

Congestion of capillaries.

Colloid infiltrated into interstitial tissue.

In/

In the two cases I observed, there was no examination made in the first, but in the second the depressors of the hyoid were found to be infiltrated with leucocytes.

In the Suppurative Form.

the suppuration is generally in the bands of connective tissue looking like small miliary abscesses.

Bacteriological examination of the pus was only made in 7 of the septic cases in my series. Of these

Pneumococci were found in 4.

B. Typhosus in 2.

Streptococci in 1. (a puerperal case)

Tavel in Kocher's eighteen cases of strumitis found haematogenous causes in ten.

In 2 bacilli after acute gastric catarrh.

In 2 B. Typhosus.

In 1 Strep. Lanceolatus after acute gastric catarrh.

In 1 B. Ccili after proctitis.

In 1 Streptococci after pneumonia.

In 1 Staph. Pyogenes Aureus in Osteomyelitis.

Griffon showed streptococci in one case also and in another Lanz and Luscher found B. Pyocyaneus. Eberth's bacillus has been found in almost pure culture/

culture by Colzi, Beaty, Kocher, Dupraz, Tavel, Schudmak and Vlachos; and Bastarelle; or associated with other organisms:-

with the pyogenes (Chantenesse)

with the staphylococcus (Spirig)

with a non pathogenic bacillus (Jrauseline)

According to Eiselberg in a section of a purulent strumitis due to typhoid, the following conditions are found:-

Pus corpuscles.

Mononuclear leucocyte infiltration.

Colloid obliterated.

Necrosis and liquefaction.

Abscess formation.

The inflammation may be in one or both lobes. It may follow the area of distribution of an artery. Multiple foci may arise.

Roger and Garnier found that in infectious diseases the gland often undergoes change without special metastasis with abscesses arising.

In infectious diseases they found:-

Thickening of intima

Thrombosis.

Desquamation of epithelia.

Thickening of follicles.

and/

and these conditions could be brought about in animals by the injection of pure cultures or by giving pilocarpine and iodine.

SYMPTOMS.

These vary with the accompanying disease. In primary affection of the gland, there are the chills, fever, malaise and headache common to all infections. The special symptoms are:-

Pain in the region of the gland.

Increased by pressure.

Usually in one lobe (right more common)

Increased pain on movement (especially extension)

Head carried forward to relieve pressure.

May support chin.

Pain often radiates to ear, neck and side of head.

Local swelling usually appears in a day or two.

Moderate disphagia.

Dyspnoea.

Later enlargement of veins of neck and cyanosis.

Voice may be affected, e.g. laboured, roughened

or even absolute aphonia has been described - probably due to pressure on the nerves.

Epistaxis has occurred in a few cases.

Giddiness has also been observed.

Pain may ^{be} referred to the distribution of cervical and brachial nerves (Berry)

Severe vomiting may occur.

Dry/

Dry cough may be present.

May have slight expectoration stained with blood or a true haemoptysis.

Irritation of the nerves may cause:-

Pain in various regions.

Formications.

Paralysis of hands (Richardson)

Termination may be in one of three ways.

1. Resolution.
2. Suppuration.
3. Gangrene.

1. Resolution took place in 49 of the 93 cases collected, that is in 52.5%, although Eiselberg states that this form of termination is rare.

The symptoms increase for three or four days, then remain stationary for some days characterised by fever with matutinal remissions. At the end of this time, the tumour which has been steadily growing, begins to diminish in volume. The average duration in this form in my collection was 13.79 days.

(Richardson gives it at about 20 days). Resolution is what occurs in all rheumatic cases and Lublinski reports four cases of acute thyroiditis after angina which ended in resolution and according to De Quervain all the published cases due to angina have ended in the/

the same way. A case after Erythema Nodosum reported by Barlow also resolved. Lublinski is of opinion that all these cases are connected with rheumatism which is extremely likely.

Richardson says that the thyroiditis associated with mumps and influenza has never been observed to suppurate and from my collection I can confirm this statement regarding the latter. The malarial cases published have also all ended in resolution.

A fresh attack may occur or some permanent enlargement may be left.

2. Suppuration occurred in 44 of the 93 cases or in 47.3%. (According to Richardson it occurs in 60 to 70% of cases) Twenty eight of these cases were already goitrous.

All the pneumonia cases suppurated.

6 of the 7 typhoid cases suppurated.

All the puerperal cases suppurated.

3 of the 4 Erysipelas cases suppurated.

2 of the 3 Diphtheria cases suppurated.

When suppuration occurs:-

The pain becomes lancinating.

The skin red and fixed.

Cervical glands enlarge.

Oedema in neck and thorax occurs.

Discolouration of neck.

Fluctuation /

Fluctuation (late and hard to detect often)

An exploratory puncture may be negative from the thickness of the pus (Richardson).

The abscess, if left alone, may open externally and may heal up rapidly or may leave a sinus for some time. It may perforate:-

1. The larynx.
2. The trachea.
3. The oesophagus.
4. The surrounding tissue and the pus may collect in the mediastinum round the bifurcation of the trachea and so on.

3. Gangrene.

A rare condition and very fatal. It only occurred in one of the cases tabulated above and ended fatally. According to Richardson, only eight cases have been recorded. It develops rapidly. Gas forms under the skin and causes distension which rapidly breaks down.

DIAGNOSIS.

This as a rule is simple, still certain conditions have to be excluded (Berry).

1. Simple acute parenchymatous enlargement especially about puberty.

In this there is no fever pain or tenderness.

2. Inflammation of neighbouring parts. Exact position. Moves with larynx.

3./

3. Sudden extravasation of blood into a cystic thyroid.
4. Malignant disease.

Very difficult, especially in the soft quick growing form.

PROGNOSIS.

The prognosis for a complete cure is good, although in a small minority of cases a certain amount of permanent enlargement remains.

Only 10 of the 93 cases collected died, i.e. 11.6% and even this is probably rather a high percentage as it is likely that many less marked cases have occurred in the course of infectious diseases and have not been reported. Of the 10 cases which ended fatally, 7 are definitely stated to have been of the suppurating form; while the only gangrenous case reported died. Therefore it may be stated shortly that

1. In simple inflammation the prognosis is very good.
2. In the suppurating form it is somewhat grave.
3. In the gangrenous form it is practically fatal.

TREATMENT.

The first thing to be done is to endeavour to ascertain the cause and attack it. For example it is seen that salicylate of soda acts admirably in rheumatic/

rheumatic cases and quinine in malarial cases.

The patient should be put to bed, a light diet prescribed and general and local means should be employed to alleviate the symptoms. For the pain, fomentations, simple or with a sedative, such as opium or belladonna added, would be recommended and leeching also is evidently of great value.

Eiselberg recommends venesection and the inunction of a mercurial ointment. For the dyspnoea, the patient should be supported in an easy position e.g. both of my cases derived great comfort from being propped up in a sitting posture, and also from the fact that the air was kept warm and moist by means of a tent and bronchitis kettle, - the steam being medicated with compound tincture of benzoin.

Tracheotomy is obviously only a last resort. A general sedative may also be given but care must be taken not to depress the heart and respiration too much, as the subsequent struggling and distress produced in clearing out the air passages may more than undo any good effects got from the temporary rest.

If suppuration is suspected, an exploratory puncture is recommended, which, however, if negative, must not be too implicitly relied upon.

If suppuration is certain, surgical means should be immediately and energetically employed. In slight cases, puncture and washing out have produced a cure.

The/

The injection of 5% carbolic acid has been recommended at different times by Kocher, Eiselberg and others.

Kocher and Brunner have now, however, come to the conclusion that a more radical treatment is to be preferred and extirpation of the site of the disease is now the routine treatment of the former.

It appears to me that this is to be preferred in cases of suppurating strumitis but is somewhat heroic for cases of suppurating thyroiditis in which perfectly good results have been got by simple evacuation and cleansing.

If a fistula should occur it would of course be treated on ordinary surgical principles.

THE THYROID IN INFECTIOUS DISEASES.

In his book on The Thyroid and Parathyroid Glands, published in Philadelphia in 1905, Hubert Richardson has a chapter on the above subject which is so important that I have abstracted largely from it. The pathology of the cases has been investigated by Roger and the experimental work was done by Garnier.

ABSTRACT.

Congestions in the thyroid gland occur under normal/

normal conditions at puberty, menstruation and pregnancy: At times the congestion becomes so severe as to produce dyspnoea. This however is very rare. This congestion may quite disappear or a slight permanent enlargement, increasing at each subsequent period may be found, giving rise to a chronic goitre often with degeneration and myxoedema.

In acute infectious diseases the thyroid often suffers more or less and many cases of cretinism, infantilism and myxoedema date from an acute infection.

To the naked eye the gland looks normal but it is increased in both size and weight, e.g. 30 to 71 grams.

The microscopic changes are marked. The colour violet; parenchyma red or brownish marbled with violet. Part of the gland may remain normal.

Histological lesions:- The connective tissue is little altered. Sometimes, especially in children, it has an excess of nuclei - never masses as in the liver etc. The connective tissue looks at the first glance as if it were increased, but this is due to the presence of colloid in the vessels.

With the high power, you see that the apparent bands of connective tissue consist of eccentric fibres with /

with the intermediate spaces filled with a homogeneous substance, uniformly coloured, giving the reaction of colloid substance dilating the lymphatic spaces. The whole appears like a network around the vesicles. This condition exists in nearly every thyroid gland in infectious disease.

The vessels are dilated.

In a case of small pox, extravasation of red corpuscles was found, mixing with leucocytes and colloid forming a magma without definite limit in which true thyroid cells could be seen. The haemorrhage had remained interstitial.

In a case of Diphtheria blood had passed into the vesicles.

Arteritis and phlebitis occur. The intima thickens producing thrombosis. Periarteritis and periphlebitis are rare.

The parenchyma is most interesting. The vesicles altered in form, dimension and constitution, the colloid being altered in its essential qualities. The vesicles are usually reduced in size as the intravascular vessels are dilated by colloid. Several acini may no longer contain colloid, and their centre is occupied by cells in a state of disintegration. Lining cells of vesicles have desquamated in many places/

places and are in the centre of the vesicle mixed with the colloid. The protoplasm of these cells is granular, the nucleus large and irregular, staining badly with haemotoxylin. Sometimes several cells are massed together in the centre of the vesicle, in the midst of which are nuclei undergoing degeneration. Other vesicles contain a certain quantity of normal colloid.

The colloid substance does not react normally to stains:- saffranin giving a faint rose for strong red; eosin sometimes does not stain it; aurantium produces a dirty brown and with certain vesicles, thionin sometimes gives green.

When the lesions in the thyroid are very marked, the secretion of colloid either ceases or is replaced by granulations of abnormal reaction. The vesicles are filled with desquamated cells crowded together which have a large amount of clear protoplasm, more rarely granulated. The walls of the vesicles have degenerated and are no longer able to contain the colloid.

In Scarlet Fever

the gland suffers severely. Out of 15 cases examined, Roger only found 2 approximately normal; one a child of eighteen months and the other a woman of/

of thirty with markedly abnormal parathyroids. Congestion is always present. No haemorrhage. The vessel walls are affected. Endarteritis and thrombosis were found in two cases. Hypersecretion of colloid was found in nearly every case. In two of the cases the colloid was altered - staining abnormally.

In measles only half of the glands examined were found to be abnormal.

In smallpox, in the one case examined the lesions were very severe. There were hypertrophy and congestion with small parenchymatous haemorrhages and the colloid was brown and granular.

In diphtheria, hypersecretion is less marked than in scarlet fever. The vessels contain many desquamated cells, and the colloid is usually altered; rarely is there any haemorrhage.

The intensity of the lesions does not seem to depend on the duration of the disease, nor is it affected by intercurrent diseases. Of the 15 cases examined, 4 died of streptococcus complications, but showed no complication of the lesions.

Garnier inoculated animals, some under the skin or into the veins and others in the thyroid arteries./

arteries. Under the latter conditions the results were very instructive.

Staphylococcus aureus produced a diffuse thyroiditis. If very virulent the lesions were parenchymatous; if attenuated cultures were used, the lesions were interstitial. In the first case the vesicles were reduced, contained pale colloid, the epithelial cells were swollen, their protoplasm stained uniformly, they seemed fused in masses in places. The nuclei were swollen and stained badly. The vessels were engorged with blood. The connective tissue was apparently normal.

If the culture was very virulent, there were destructive lesions, with death of cells, vessels disrupted and colloid filling the lymph spaces. If an attenuated culture was injected, there was arteritis, masses of leucocytes, in the centre of which were degenerated epithelial cells, were in the vessels.

Experiments with the typhoid bacillus produced the same diverse anatomical lesions but more diffuse. With very virulent cultures, haemorrhagic thyroiditis occurred. With less virulent cultures, there was epithelial degeneration, capillary congestion and endarteritis./

endarteritis.

When the animals were allowed to survive, sclerosis occurred in the form of bands of connective tissue. The vesicles appeared to be normal but their walls were much thickened. There was also a certain amount of endarteritis and periarteritis.

Toni experimented on the same lines with the pneumococcus, typhoid bacillus and anthrax. He used less virulent cultures than Garnier and got the same results but less marked.

These experiments show that infectious diseases produce certain lesions in the gland which vary with the intensity of the infection. Suppurative thyroiditis is ^{not} uncommon in infectious diseases. Haemorrhagic thyroiditis is rare, occurring more often in smallpox. Sclerosis of the thyroid may occur as the result of any of the acute infectious diseases and also in tubercle and syphilis, which accounts for the numerous cases of myxoedema and infantilism after acute illnesses. The symptoms of myxoedema may not occur for months or years afterwards, the sclerosis progressing slowly.

When the inoculations were made at some distance from the gland, there were but slight pathological changes/

changes in it. The staphylococcus, typhoid bacillus and anthrax produced no lesion which could be detected. The streptococcus however, produced lesions resembling those described as occurring in man.

By injecting diphtheria toxin into a guinea-pig, Roger produced lesions in the gland resembling those occurring in man. The colloid leaves the alveoli; entering the lymphatics; at the same time it is so abundant as to entirely mask the vesicles and in the lakes that form are epithelial cells. At other points the cells desquamate into the middle of the vesicles. All the colloid enters the vesicles but retains its normal characteristics.

Tetanus toxin produced rather different results. Lesions were less marked and consisted principally in slight hypersecretion. In one case which developed slowly, the colloid was granular and yellow taking the stain poorly.

The effect of the inoculation of cultures on the gland seems to resemble very much the action of pilocarpin and iodide in producing a hypersecretion which flows into and engorges the lymphatics, dilating the vesicles and there appears but one vast mass of colloid, scattered irregularly, among which are rows of/

of nuclei, the cells having desquamated and filled the cavity of the vesicles, their nuclei staining badly and showing irregular outlines. The colloid remains normal; while in infectious diseases, although the anatomical lesions are the same, the colloid is evidently chemically changed so that while there is hypersecretion, there may be "disthyroidation," which may amount to the suppression of the function of the gland.

It follows that, during the course of infectious diseases, there are secretory troubles in the thyroid gland as well as in the other glands of the body, a period of hyperactivity followed by a period of diminution or alteration of function. As the liver excretes abnormal pigments, so the thyroid secretes abnormal colloid substance.

Usually the lesions are slight and quickly repaired, but it may not always be so. Pathological conditions may persist and be progressive, producing partial or complete loss of function accompanied by symptoms of hypo - or a-thyroides..

REMARKS.

I can find no other reports in literature which confirm these statements of Roger and Garnier and it seems to me that their experiments have scarcely been conducted on a large enough scale for their results to/

to be received absolutely. There has, however, been little time since they were published for other workers to collect and publish the results of their autopsies. I have consulted one or two authorities on infectious diseases in this country and they do not seem to have ever heard or suspected that congestion or inflammation of the thyroid gland was a common accompaniment of such diseases and consequently they have not been in the habit of looking for it post-mortem. From the position and anatomy of the gland too it is easy to understand how it might increase very much in size without being detected during life. There are numerous cases on record of large goitres which have only been detected by the symptoms they produced and on operation the tumour was found to have grown entirely backwards in one or both lobes with little or no affection of the isthmus.

Anomalies are also common. The isthmus may be absent and occasionally when present it passes behind the trachea.

The physiological congestion and swelling of the gland referred to in the beginning of this article is also seen in animals, for example in a stag during the rutting season.

It/

It seems to me therefore that if greater attention were paid to this matter in the future, the cause of many of the so-called ideopathic cases of infantilism and myxoedema and possibly also the reason of some of the unpleasant complications and sequelae which are too often found associated with many cases of the infectious diseases might be ascertained. It is not also too much to say that by prompt diagnosis and careful treatment they might be altogether prevented or to a large extent modified.

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