

CAPILLARY BRONCHITIS.

(This essay embraces some of the views of Roberts, Aitken, and Niemeyer.)

The older writers called this disease capillary or suffocative catarrh, a name which we think eminently judicious, as it not only gives the anatomical seat and nature of lesion, but also gives the lesion of function. It is usually an acute affection, though sometimes found in a chronic form in the aged. It may present simple hyperæmia, or may be of the catarrhal or croupal form; the catarrhal giving cells, mucus, pus, etc., and the croupal giving fibrinous elements.

The causes may be predisposing and exciting. The predisposing are:—

1. *Age*.—More common in infants, especially during dentition, and in the aged.

2. *Habits*.—Over-heated rooms, over-wrapping, and too much coddling are favorable to its production.

3. *General Health*.—Weak and enfeebled persons, diabetes, Bright's disease, scrofula, gout, rheumatism, etc.

4. *Weak Lungs*.—Tubercular deposits, cancer, etc.

5. Obstructed circulation, as in heart disease, ascites, etc.

6. *Occupation*.—Those exposed to heated rooms and cold draughts, exposed to wet and cold out of doors; knife, scissors, and steel grinders; workers in cotton, charcoal, etc.

7. *Climate*.—Damp, cold, fickle or changeable climates predispose to bronchitis.

8. *Season*.—Fall, winter and spring, in bad weather and inclement seasons.

9. More prevalent in large towns, etc.

The exciting causes are:—

1. Exposure to cold and moisture, and more especially if the patient has already a bronchial catarrh involving the larger tubes.

2. Inhalation of irritant gases, and of dust from steel, cotton, charcoal, etc.

3. Morbid blood conditions, as measles, typhoid fever, scarlatina, small-pox, gout, and rheumatism.

4. Sometimes epidemic, as during influenza.

Symptoms.—These vary somewhat, according to the amount of bronchial surface involved, and also to the previous condition of the patient. If not very decidedly extensive, they are usually as follows:—

1. Shiverings, chills, etc., repeating themselves even during the rise of fever, headache, nausea.

2. Comparatively little pain at first, but an incessant dry, rasping cough.

3. Whistling, wheezing, sibilant rales.

4. Dyspnoea, but no dullness on percussion.

5. Rapid respiration, anxiety and restlessness.

6. Expectoration at first scanty, clear and viscid; afterwards more free, opaque, whitish or yellowish. If a large surface in each lung be implicated, the dyspnoea is excessive, and the restlessness and anxiety very marked, while the respiratory efforts are rapid and laborious. The face often indicates great terror and intense distress, and in children this sometimes amounts to an agony of fear. After two or three

days there are muscular pains from straining in the violent paroxysms of coughing.

The shiverings, fever, dyspnoea, dry cough, rapid respiration, sibilant rales, clear percussion, etc., are the symptoms most reliable for diagnosis. The restlessness and distress are also of value. The absence of any great amount of pain, and the presence of the harassing paroxysmal cough in pure capillary bronchitis are remarkable, and can only be explained on this ground, viz: the afferent nerves, conveying impressions to the nerve centres, do not belong to the class which transmit the sensations of pain, but form one portion of a physico-reflex arc, and the impressions received are transmitted to the nerve centre and a motor influence at once reflected back, which motor element we recognize as the muscular effort of coughing. Nature has here wisely protected these minute tubes from occlusion by tenacious secretions, and from obliteration by adhesive inflammation of the walls; the violent and convulsive efforts are, therefore, to a great degree conservative against obstruction of calibre, though if in too great excess, they are exhausting and injurious. It is evident, therefore, that the most delicate of all therapeutical questions will be, "*when and how far to control this cough by anodynes*;" and keen must be the observation of the practitioner, and shrewd his judgment, when in a severe case he desires to save his patient from the exhaustion of the cough, and at the same time avoid the great danger of obliteration of a large space of breathing surface, by permitting capillary occlusion from retention of secretions. If it be true, as stated by a high authority (Draper, p. 159), that each terminal bronchus has 20,000 air cells attached to it, and that there are 600,000,000 of these air cells in the lungs, we can readily appreciate the danger, in the case of extensive bronchitis, of the obliteration of the calibre of these tubes, even though the diameter be not more than from 1.50 to 1.10 of an inch, for such obstruction must cut off a large area of breathing and hasten asphyxia. And this is more particularly true of children too young to expectorate and thus relieve the tubes of this obstructive mucus, pus, or croupal formation, and yet whose impressible nervous systems render the incessant cough one of the most prominent and annoying symptoms. In several cases seen in the last few months, there appeared almost an absence of pain (except from muscular soreness), while there was a most marked and aggravating cough, continuous even during sleep, and recurring each day or night in paroxysms so distinct as to lead to a strong suspicion of complication by malaria. The bronchial membrane appeared almost in a state of anæsthesia as regards pain, but excessively active as regards reflex impressions resulting in motor impulses. Emetics demonstrated the croupal element in several of these cases.

Dangerous Symptoms.—When a very large area is involved, when the secretions are very fibrinous or croupal, when the patient is feeble or has a chronic disease of the lungs or heart, when a fresh attack from exposure complicates an already uncured attack of an extensive character, and when the patients are very young or very vulnerable children, we have often