HYPERVERVENTILATION SYNDROMES
AS SEEN IN KATHMANDU

by
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Naturally neurotics or psychotics may have the same signs and symptoms as anyone else. Others are easily identifiable as being of psychological origin. Despite their psychological basis certain neurotic reactions are similar to organic ones and may need most urgent and immediate attention. One such symptom—complex which actually endangers life if not properly treated is the hyperventilation syndrome.

Symptoms

The patient (most often female) complains of constriction of the chest usually occurring toward evening. Not infrequently this is preceded by peculiar sensations in the epigastrium described as “butterflies in the tummy” or on occasion as outright pain similar to that from peptic ulcer.

The feeling of relief of the “band on the chest” is followed by an attack of forceful and rapid breathing with some difficulty experienced in both the expiratory and the inspiratory phases. After three to five minutes of such hyperventilation the breathing may become irregular and at times involve long apnoeic pauses. Unconsciousness lasting anywhere from a few seconds to five or six minutes is not unknown. In other patients there may be a spasm of the extremities and in a few cases occurrence of carpopedal spasms, a typical feature of hypocalcemic alkalosis.

Five of the patients in the present study mentioned that the onset of the attack is usually near midnight when they would awake from some terrifying dream. These patients usually have profuse perspiration requiring a change of both nightclothes and bed sheets. Some perspiration is found in almost all of the cases.

Frequency of attacks

There is great variability as to the frequency of attacks. In some cases they were several months apart but as time went on the tendency was for attacks to become more and more frequent so that at last a search for treatment became mandatory.
In seven of the patients, attacks were multiple during a single day whereas in others, intervals were anywhere from a few days to a few weeks apart. Nine of the patients reported that they know in advance that such attacks are impending. In five of the nine case there was continuous yawning for about an hour before the actual attack. In the remaining four, marked lethargy and somatic signs such as muscular pain of the back, shoulder and calf muscles were reported.

Associated symptoms

Unilateral headache lasting for a few hours coming in paroxysm was reported by seven of the patients but these headaches bore no relationship to the episodes of hyperventilation.

Gastrointestinal symptoms

Eight of the patients reported occasional pain in the abdomen of a colicky nature which did not respond to anti-spasmodics but which was relieved by the use of tranquilizers. In order of frequency the sites of pain were left iliac fossa, in the neighborhood of the umbilicus, right hypochondrium, the right iliac fossa, epigastrium and left hypochondrium. The patient might complain of pain in one region at one time and at another place at another time.

Twenty-five of the 28 patients in the study had complaints of nausea or vomiting at one time or another ranging from intractable nausea to mild vomiting. Small doses of chlorpromazine provided no relief and in most cases the dosage had to be raised to a reasonably high level.

Appetite

Poor appetite characterized 14 of the patients in eight of whom intravenous glucose was needed to supply nutrition. For reasons not clearly understood a small amount of intravenous glucose was often sufficient to improve the appetite. In only two cases was it necessary to add an anabolic compound and in one of these parenteral insulin was needed to produce an appetite. Almost all of the patients felt nausea at the sight of food.

Bowel movements

Bowel habits were very irregular. The same person on different occasions might have constipation for some time and subsequently loose and repeated bowel movements. In general there was a tendency toward constipation and the patients were very conscious of their bowel movements.

Hiccoughs

Two of the patients in this series complained of frequent bouts of hiccoughing lasting for variable periods of time which occasionally required treatment. In general,
response to treatment was poor and on two occasions in one of the patients the hiccup was not relieved even by considerable amounts of chlorpromazine. Eventually the patient became so drowsy that sleep ensued and hiccup was gone the next morning.

Urinary symptoms

Frequency of micturition occurred in eight of the patients and in each case was more frequent at night. Even with the perspiration that occurs in summer they had to urinate more than three times during the night. Four of the eight complained of burning sensations during and after urination. The symptoms were paroxysmal in nature usually lasting from a few hours to a few days once they had begun. They disappeared without specific treatment. Urinalyses, urine volume, etc. were all within normal range.

Rhinitis

Five of the patients had frequent attacks of rhinitis lasting from two to five days. Examination by an ear, nose and throat specialist revealed no evidence of disease except the rhinitis. Allergic origin of the disorder could not be excluded but antihistaminics were of no help. Two of the patients spontaneously commented that both their rhinitis and hyperventilation appeared related to emotional disturbances.

Giddiness and vertigo

It was not easy to differentiate between vertigo and dizziness from the description by the patients. Close enquiry showed that two or three had real vertigo which was worse after an attack of hyperventilation. In the period between attacks they had paroxysms of vertigo lasting from two minutes to three hours.

Epilepsy

Two of the patients in the series had grand mal seizures.

Palpitations

Four patients had attacks of paroxysmal tachycardia, more than 150 per minute, lasting for a few minutes and disappearing without treatment. These four patients did not have attacks of hyperventilation for considerable periods of time once such an episode of tachycardia had occurred.

Population

Age

There were 28 patients in the series whose age varied from 13-53 years. The age distribution is given in table 1.

Only one of the 28 patients was male.
### Table 1.

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Average age was 24.75 years.

**Family history**

There was nothing of clinical significance in the family histories.

**Personal history**

Of the 27 female patients, three were widows, 10 were married, and 14 were single. Six had good educations, two had some education, and the remaining were poorly educated. The single male, age 16, was receiving a reasonably good education.

Emotionally all of the 28 were unstable. Personal histories reveal that some were very much attached to their mothers. Many were destructive, breaking the pen in which they were housed, tearing off their clothes when rebuked or refused something. Others would not eat for days together at very slight provocation. There were quite a number who used to bolt the door and remain inside for periods as long as 48 hours. In two cases the door had to be broken down to be sure they would not harm themselves. Crying, shouting and even beating their own chests were common features with many of them.
Differential diagnosis

These cases had to be differentiated from a variety of other disorders which was done according to the main and accompanying symptoms, the mode of onset and the severity. Differential diagnosis included anorexia nervosa, bronchial asthma, cardiac asthma and alkalosis. The one case which gave the greatest diagnostic problem involved a differentiation from alkalosis because the patient had consumed large amounts of sodium bicarbonate a few days prior to relieve pain in the abdomen. In part she seems also to have taken the sodium bicarbonate as a suicidal gesture to threaten her husband, or she may have really attempted suicide thinking that the drug was as dangerous as other potent ones although it was not clear why she chose to take it in divided doses. There were sufficient clues to make the diagnosis once it is remembered that neurosis is diagnosed not only by exclusion but because of positive findings.

Laboratory investigations

The common laboratory work included total and differential white blood counts, hemoglobin blood urea, estimation of serum calcium (in a few cases), urinalysis, stool examination, chest x-ray and electrocardiograms and urine cultures in selected cases. All laboratory results were within the normal range.

Management

Assurance and re-assurance was the first and best line of treatment. Drugs could help to some extent but selection must be done with care because some of the patients tolerated tranquilizers very poorly. This was particularly so if some element of depression was present. On the other hand, a few required comparatively large doses of tranquilizers. The overall prognosis with the treatment was good.

Summary

Twenty-eight individuals having hyperventilation syndrome are presented with available data. Twenty-seven of the 28 were female with typical age distribution mainly in the 20s and 30s. There was no organic pathology but the symptoms were nevertheless alarming. Emotionally the patients were unstable and explosive with a great frequency of immature reactions. Although the frequency of hyperventilation syndrome is not great, nevertheless diagnosis and handling of such can be difficult.
QUESTION AND ANSWER

Question

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