

In respect to this, the experience in the Terai affords interesting data. The "shanties" above alluded to are not only inadequate as domiciles, but they are positively dangerous to live in, considering the climate. The nights in the Terai are as a rule very draughty, and there is a great difference at some seasons between the temperature of the day and at night, which in the latter case is still further lowered by the sharp breezes which often sweep through the "shanties" in every direction, from sides and the top as well as from below. It is a fact that, during the month of November, the thermometer in the sun often stands at 120°, and at night it falls to 55°. Under such circumstances, what ordinary protection is there possible against these climatic changes? And the universal result is ague and fever! Those planters who have good, well-built, houses to live in, affording due protection, particularly at night during sleep against these sudden changes of temperature, are known to keep their health in the Terai, even as well as almost in any part of the plains in India!!

I wish to conclude with a few practical deductions.

It should, I think, be a golden rule for an inhabitant in the Terai to use every rational means of protecting his skin, to prevent its healthy function being interfered with by sudden variations in temperature, as on the healthy and uninterrupted functions of that organ chiefly depends the future immunity from much suffering, and the possibility of continuing in the calling in which every planter hopes to secure his ultimate independence. It is hardly necessary to mention that long-continued exposure to the sun's rays should be avoided, and that wholesome, plain, well prepared food, regular hours in everything, and absolute temperance, are conditions not to be neglected. A *closely-fitting* merino shirt (banian) next to the skin should *invariably* be worn, and a cotton or a flannel one over it, according to the season; a broad flannel waistbelt, reaching from the ribs to the hip, is strongly recommended. As long as the body is in motion, no great harm can, as a rule, result from the damp caused by perspiration, which the merino in a great measure takes up; but on reaching home it should without delay be changed for a dry one, so as to remove the wet garment *in contact* with the skin. A disregard of this precaution leads to inevitable derangement of the cutaneous function, and fever or bowel complaint, or both, will sooner or later be inevitable.

The observance of the above hints will, I venture to hope, prevent dangers, to which the first pioneers in the Terai have been subject. The proofs already in our possession are calculated to lead us to the conviction that the ague-producing poison is generated *within* our own system in the manner indicated, and should be hardly attributed to that mysterious agency, "malaria" or bad air, supposed to be prepared in the atmosphere as a virulent poison.

Assuming the first theory to be true, there is evidently every possibility of adopting rational means to prevent suffering; in the latter case, on the contrary, disease must be looked upon as a *fatality*, to avoid which, nothing effectual can be done—a cheerless, but it is to be hoped, unnecessary alternative.

December 1873.

## GUNSHOT WOUND OF HEART NOT IMMEDIATELY FATAL.

By R. H.

ON the 17th of January last, when beating for a supposed leopard, a fine tiger walked directly under the tree, on a low branch of which I was sitting, giving me a deliberate shot at a distance of not more than four feet. He dropped to the spot, clawed furiously at the ground, and turned round and round for about 15 seconds, then pulled himself together and set off at a gallop, getting my second shot after going about 30 yards.

This turned him, he went about 15 yards more in a series of wild plunges and then fell over, gave a kick or two, and died. On examination he proved to be a male 9' 7" (skin stretched to 11' 3") in length. The ball, an ordinary 12 bore round bullet fired from a smooth bore with 3¼ drams of No. 6 powder, had struck him about an inch to the right of the spine, passed through the right lung, struck the heart in the septum ventricular below the right auricle, and torn a huge hole through the right ventricle besides opening the left into the right, then grazed the left lung and emerged below, an inch and a half to left of the mesial line. The exit wound both when recent and in the dried skin was very decidedly smaller than that of entrance, a *phenomena which I have frequently observed* both in men and animals: in the heart, however, the usual rule held good, and the aperture of exit was twice the size of that of entrance.

I have frequently *heard* of such cases. A friend tells me that he has seen a tiger go 150 yards with his heart "blown to bits" by a shell; and a second assures me that another, wounded as mine was, went 80 yards after attempting to pull him out of his tree. My second bullet entered behind the left elbow and comminuted the radius badly or the beast might have gone further than it did. As it was he went nearly 50 yards, and although he died probably within a minute, it might have been a very awkward minute for me had he seen me. The moral of the case for sportsmen is—always aim at the brain.

## A MIRROR OF HOSPITAL PRACTICE.

### A CASE OF ANEURISM OF THE ASCENDING AORTA.

By Surgeon J. CLEGHORN, M.D., *Assistant Civil Surgeon, Allahabad.*

THE patient was an army medical officer, unmarried, of fifteen years' service, and thirty-eight years of age. He was of average height, of fairly active and strictly temperate habits, and had inherited a good constitution.

He stated that his present illness began on or about the 1st of October last, as an occasional cough and difficulty of breathing after slight exertion, such as playing a game of badminton or quoits. His friends, however, informed me that he had a dry paroxysmal cough, with noticeable frequency of breathing in the previous June or July. These symptoms were either slighted, or did not attract his attention, till the beginning of October, when they became so troublesome as to incapacitate him for the discharge of his duties, and he reported himself ill. He consulted no one regarding his symptoms, as he himself thought that he was merely suffering from an attack of spasmodic asthma, an affection to which his father was subject. Change of air, he believed, would effect a cure, and he travelled about the district for ten days, with such apparent benefit, that on his return to the station he reported himself as fit for duty, and was accordingly removed from the sick list. On attempting to perform his duties, he found that the exertion of driving, &c., brought on a return of the difficulty of breathing, and increased the frequency of the cough, and he was again placed on the sick list.

I saw him for the first time on the 7th December, when he informed me of the above details, and stated that he had applied for two months' leave, and intended trying the effects of sea air. The serious nature of his symptoms were so apparent, that I doubted the advantage of this plan, and suggested the advisability of his submitting to an examination, and to whatever treatment was considered necessary for his relief. The suggestion was at once adopted, and the following conditions and symptoms were noted:—He was rather prematurely aged, with iron gray hair, muddy conjunctivæ, sallow complexion, and a marked stoop at the shoulders. His breathing was laboured, noisy, and wheezing, with occasional whistling sounds, slight dry cough occurring mostly in paroxysms, accompanied with dyspnoæal attacks. Pulse intermittent, full, and strong. He lies on either side, but cannot do so on the back, as this position at once induces cough and dyspnoæa. Has good

sleep till 2 or 3 o'clock in the morning, when cough and dyspnoea invariably awake him; feels dull and heavy during the day, and frequently sleeps for an hour or two after breakfast. Appetite fairly good; complains of no pain or uneasiness in the chest, unconnected with the respiratory symptoms. The physical signs on inspection were as follows:—Pupils of equal size and acting normally; right external jugular vein fuller than left; strong and heaving pulsation in both carotids; chest well formed, exhibiting no abnormal prominence or pulsation; apex beat at ensiform cartilage, but pulsation also seen to left of lower end of sternum; right side of chest above and in front not responding to inspiration.

**Palpation.**—Apex beat as noted above. No other pulsation detected, and no purring or tremor appreciable by the hand when laid flat on the chest. Vocal resonance increased over right side of the chest, more particularly on anterior and lateral aspects.

**Percussion.**—Absolute dulness over manubrium sterni, upper part of sternum, over cartilages and interspaces of second and third right ribs, and to a small extent to left of upper part of sternum; slight dulness over middle of sternum, appreciable on gentle percussion; cardiac dulness enlarged, and displaced downwards and to right.

**Auscultation.**—No respiratory murmur whatever over upper and inner part of right lung on anterior surface. Elsewhere dry wheezing and blowing sounds, except at base posteriorly where there was normal vesicular respiration; wheezing sounds in front of left lung superiorly, and to a less extent over whole of anterior surface, breath sounds are however nowhere absent. No moist sounds heard anywhere; sounds of heart loud and clear, and heard over a large extent of surface, but they in other respects appeared to be normal; no murmur or other abnormal blood sound heard over the dull spot at upper part of chest. When the ear was applied to the stethoscope, placed over cartilage of second right rib, a distinct heaving was appreciated, not recognisable by eye or hand. No murmur in the carotids; pulse simultaneous with heart beat. From these signs and symptoms, I concluded that the patient was suffering from an aneurism of the ascending aorta, with enlargement and displacement of the heart. From the extent and position of the cardiac dulness, I thought that there also might be effusion in the pericardium, but the clearness of the sounds was decidedly against such a supposition. I saw the patient again on the following evening, just after he had finished playing a game of quoits, and as such exercise was likely to develop a murmur, if aneurism was present, I examined the upper part of his chest with a stethoscope, and distinctly heard a diffused humming sound over the manubrium sterni and cartilages of right upper ribs. The signs of thoracic aneurism were now complete, and the diagnosis confirmed. On the 10th December the same diffused humming sound was developed by exercise, and heard by the other physicians.

The patient continued in much the same state as above described, till the 13th December, on which date he imprudently drove in a dog cart to visit a friend; in the course of the drive the horse became restive, and the exertion required to restrain him threw the patient into such a violent fit of dyspnoea that he was rendered utterly helpless, and he felt as if death was inevitable. After lying a short time in the recumbent position, his breathing became freer, and he reached home, the syce leading the horse, in a very exhausted condition. This attack left him slightly cyanotic with puffy face and eyelids. Chloral with perfect rest gave him comparative ease till the 22nd December, when the slight exertion of moving suddenly from his bed again brought on severe dyspnoea, which imperceptibly, but gradually, increased till his death, on 31st December. During the latter week of his illness, breathing, such as it was, was very possible in the sitting posture, and the slightest movement greatly aggravated the dyspnoea. His sufferings were somewhat alleviated by chloroform inhalations.

**Post-mortem examination.**—The chest only was examined. A sacular aneurism, oblong in shape, the size of a large orange, was found on the ascending aorta, commencing immediately above the sinuses of Valsalva, and extending upwards to the commencement of the transverse part of the arch. The right, left and posterior walls of the artery were implicated, and the aneurism extended to the right, bulging and spreading out posteriorly, so that a small portion could be seen to the left of the artery. The cavity of the aneurism contained a decolorized clot, the size of a hen's egg. The sac gradually diminished in thickness from each side to posterior aspect, where it

was quite soft and as thin as note paper. The aneurism rested on the trachea for a short distance above the bifurcation, on the right bronchus as far as it was uncovered by lung tissue, and on a small portion of left bronchus. The rings of the air tubes so covered were compressed and their diameter flattened; which shape they retained on removal of the aneurism. The superior vena cava was pushed to the right. The internal coat of the descending aorta had in parts a puckered appearance, but no erosion or loss of substance was observed.

The heart was enlarged, but not to such an extent as the physical signs lead me to believe; it was displaced downwards and more horizontal in position, than natural. Lungs congested at the base, otherwise healthy.

**Remarks.**—The patient was examined by several medical officers, but opinions differed as to the cause of the symptoms. It may, therefore, be instructive to note the value of the different signs, individually and collectively, and try to ascertain if they could have been caused by any diseased state, other than what existed. The most suggestive sign discovered at the first examination was undoubtedly the dulness over the upper part and to the right of the sternum. This sign taken alone showed that there was a tumour of some kind underneath: it might have been an aneurism, or cancer proceeding from the lung or the mediastium. Enlargement of the anterior mediastinal glands may be thrown out, as they, in their normal position, are situated "in front of the pericardium and others around the great vessels at the base of the heart" (Gray) so that had they been enlarged to such an extent as to reach to the manubrium sterni, the dulness would have been continuous with that of the heart, and of the same intensity throughout. With regard to cancer of the lung, which like that in the mediastinum is almost invariably secondary, both percussion and auscultation, showed that the tumour could not have proceeded from the lung. As the limits of dulness on the right of the sternum did not correspond to the region in which there was absence of respiratory murmur, the latter condition was therefore not due to consolidation, but to arrest of lung function. The absence of moist sounds everywhere, but particularly in the neighbourhood of the dulness, showed that there was no irritation of lung tissue, which must have existed in presence of recent deposit in the lung texture. Cancer of the pleura, occupying the anterior mediastium, would, with such rapid increase, as judging from the short duration of the more intense symptom, took place in the case under discussion, have given rise to pain, friction sounds, and probably to effusion. From the position and extent of the dulness, aneurism of the ascending aorta, naturally, first suggested itself. It would account for the increase in cardiac dulness and for the displacement of the heart downwards. Gentle percussion carried the upper dulness down with that of the heart. Percussion then alone showed that a tumour existed in the position of the ascending aorta, and that it was connected with the heart.

Auscultation discovered dry blowing sounds of different intensities in the right lung, with absence of all respiratory sounds in the upper anterior part of the same lung, which inevitably showed that there was something pressing on the right bronchus preventing the free admission of air into the lung. The heaving appreciated by the ear, when the stethoscope was placed over the cartilage of the second right rib, proved that the tumour was connected with the aorta. The results of percussion and auscultation therefore corroborated each other, as to the presence of a tumour in the course of the ascending aorta, compressing the larger air tubes. The absence of murmur at this stage justified doubt as to the diagnosis, but this could no longer exist when the humming sound was heard. A perusal of cases shows that a murmur is far from being invariably present.

The other points in the case suggestive of aneurism were the insidious nature of the symptoms during the first stage, their paroxysmal character, the stoop at the shoulders, intermittent pulse, fulness of right external jugular impulse of carotids, increase of cough and dyspnoea when decubitus was dorsal, and afterwards the puffy and cyanotic condition of the face.

The other symptoms of aneurism described in text books, such as inequality of the pulse, with an appreciable interval between them and the apex impulse, œdema of the upper extremities and pulsation and prominence over the tumour, were absent.

The age of the patient was mentioned as being against aneurism, but although the affection is commonly observed in persons

of mature age, still its occurrence is by no means rare in individuals at and considerably below 38 years of age. It was only the other day that I made a *post-mortem* examination on the body of a native, whose age, as stated by the mother, was only twenty years; he appeared to me to be two or three years older, who had died from the bursting of an aneurism, the size of an ordinary orange, of the ascending aorta. Secondary pouches had formed in the sac, in one of which a rupture had occurred.

ALLAHABAD, 24th January 1874.

### DEATH CAUSED BY THRUSTING A BAMBOO STICK INTO THE RECTUM.

By GEO. A. WATSON,

Surgeon-Major, 19th Bengal Lancers.

MISKUN, Sowar, 1st Troop, 19th Bengal Lancers, a Pathan, aged 17, service two years, was admitted into hospital on the morning of 24th October 1873, complaining of pain in the abdomen, and of having passed blood from his bowels. He was thought by the native hospital assistant to be suffering from dysentery, and as the weekly return of sick had to be sent in the next morning, he was entered under that disease. Symptoms of obstruction and inflammation of the bowels now came on, the abdomen becoming greatly swollen and painful, and, in the following weekly return, he was entered under the head of obstruction of the bowels. Repeated enemata of warm water were given, but they brought away very little feculent matter. On the 29th the bowels were moved slightly, and again more freely on the 30th, and on the two following days he passed several round worms (*lumbrici*). Although the symptoms of obstruction had ceased, those of severe inflammation of the bowels continued, and on the 3rd November he began to pass pus mixed with his motions. To inquiries made as to whether he could account for his illness in any way, he replied that he had gone to the city the day before his admission into hospital, and had eaten a quantity of meat and drank some spirits. Pus continued to pass daily with his motions, the abdomen was very tender and painful, and his pulse ranged from 125 to 150.

On the 9th November, he made a statement that the evening before his admission into hospital he went to the city with three other men of the regiment who drank some *churrus*, and on their return took him into a field, and that one of them forcibly thrust a thick bamboo stick into his rectum, pushing it backward and forward several times with great violence, and that this was the origin of his present illness. The shame of having suffered such an indignity, he said, prevented him from saying anything about it before.

I examined the rectum, but could not at first detect any injury except two small sores at the margin of the anus. Two days afterwards, however, on examining the rectum more carefully, and using the forefinger of the left hand with its palmed surface turned forward, I was able to detect a large hole in the anterior wall of the rectum, just within reach of the tip of my finger, which readily passed through it. He was now entered in the weekly return under the head of wound of the rectum. He continued to suffer great pain and tenderness in the abdomen, particularly to the right of the umbilicus, and to pass pus daily with his motions, and occasionally round worms; his pulse was rapid throughout, he became much emaciated, and died on the evening of the 21st November, 29 days after the infliction of the injury.

A *post-mortem* examination was made on the following morning. On opening the abdomen the whole of the intestines below the level of the umbilicus were found adherent to the abdominal walls from peritonitis, and the convolutions of the small intestines were glued together by inflammatory adhesions: these adhesions were more extensive at the sides, in the right and left iliac regions, particularly the former. On separating these adhesions a quantity of pus escaped on both sides. On examining the small intestines the following openings were found:—1st.—One in the mesentery of the ileum, one foot distant from the ileo-cæcal valve, circular in form, and about  $\frac{1}{2}$  an inch in diameter. 2nd.—One in the ileum  $4\frac{1}{2}$  inches higher up the bowel than the last,  $1\frac{1}{4}$  inches in length by 1 inch in breadth, extending from the attachment of the mesentery across the anterior surface of the bowel. 3rd.—Another opening in the ileum similar to the last, and 10 inches higher up. 4th.—About an inch and a half higher up than the last were

two small circular openings, in one of which only the outer coat of the bowel had been perforated, and 2 inches higher there were two more small openings. 5th.—About 40 inches above the last was another circular hole in the small intestine, about an inch in diameter, one similar in every respect 3 inches higher up, and a third also similar 8 inches above it. Near the first of the holes last mentioned there was a place of similar size in which only the peritoneal coat was deficient, the mucous membrane being intact. Near the opening in the mesentery, and the lowest opening in the ileum there was a quantity of effused coagulated blood on the surface of the bowel, and in the folds of the mesentery. The mucous membrane of the small intestines showed no signs of ulceration or disease in any part; the margins of the holes were well defined and not thickened. The colon was free from disease and perfect throughout; but on one side of the peritoneal coat of the sigmoid flexure, there was a dark, black discoloration from effused blood for a length of 8 inches. In the anterior wall of the rectum there was a large oval opening  $2\frac{1}{2}$  inches long by  $1\frac{1}{2}$  inches broad, situated 5 or 6 inches from the anal aperture, and quite 2 inches above the peritoneal reflection; its edges were not thickened in any way. The mucous membrane of the rectum was of a dark purple color, and near the perforation, black from effused blood. At the margin of the anus there were too small sores.

REMARKS.—There can be no doubt that the injuries in this case were produced in the way described by the man himself. The deceased was a Pathan and is supposed to have been in the habit of submitting to the practice of sodomy with one of the men concerned in the outrage, and the latter had become enraged against him by his having conferred his favor on another man. All the three men concerned in the outrage were Pathans, and were under the influence of *churrus* at the time the deed was done. They were tried and sentenced to seven years' imprisonment and fined under Section 325 of the Penal Code.

The crime is not an uncommon one in India, and several cases are mentioned in Chevers' Jurisprudence. It is particularly prevalent amongst the Pathans, who seem to select this mode of injuring or killing those with whom they are at enmity, mainly on account of the shame and disgrace attached to it. But it is not unlikely that they may also be in part influenced by the fact that the crime is difficult to detect owing to the injuries being out of sight; and the sufferer himself would not be likely to confess what had been done to him for fear of the ignominy that would attach to him when it became known that he had been subjected to such an indignity. Such was the case in the present instance, it was only when he became convinced that his disease was likely to prove fatal, that the patient was induced to make known in what way the injuries had been inflicted. I confess that, although aware that a lesion of the bowel had taken place in some part, I had not, previous to the statement made by the man himself, the slightest suspicion that it was the result of violence.

Another point of interest in connection with this case is the fact that a man with a large hole in his rectum, opening directly into the peritoneal cavity, and such a number of holes of large size in the small intestine should have lived for 29 days after the infliction of the injury.

Not having an opportunity of doing so on the human subject, I experimented on the intestines of a recently killed sheep, and found that on striking them with the end of a thick bamboo stick when resting on the ground, I produced precisely similar holes to those found in this man's small intestines. And there can be no doubt that these were caused by the end of the bamboo stick after it had pierced the rectum, striking the intestines where they rested against the spine and prominence of the sacrum: and this is confirmed by the fact of only the outer or peritoneal coat of the bowel having been ruptured in one or two places.

A case similar to the above occurred in Lucknow five years ago, but the medical evidence was not clear as to the injuries being the sole cause of death, and the perpetrator of the crime (also a Pathan) was only sentenced to five years' imprisonment.

LUCKNOW, 24th January 1874.

The Siamese twins have died. It appears that Eng survived Chang two hours. We have not as yet received any particulars of the circumstances of their death or of the *post-mortem* examination, if any.