MEDICAL GRAND ROUNDS

NOVEMBER 8, 1962

CASE HISTORY: [redacted] #[redacted]. THIS IS A 20 YEAR OLD [redacted] MALE WHO WORKS IN A LOCAL DEPARTMENT STORE IN A DUSTY ENVIRONMENT. TEN DAYS PRIOR TO ADMISSION HE DEVELOPED HEADACHE, RHINITIS, FOLLOWED BY COUGH, THEN PAIN IN THE RIGHT CHEST OF A PLEURITIC NATURE. SUBSEQUENTLY THE SPUTUM BECAME MUCOID, THEN GREENISH-YELLOW AND FINALLY RUSTY IN COLOR. HE IS A KNOWN ASTHMATIC WHO HAS USED BRONCHODILATOR DRUGS SYMPTOMATICALLY FOR MANY YEARS. OTHERWISE HE WAS IN GOOD HEALTH. ON ADMISSION HE HAD FEVER 102°; THERE WERE RHONCHI THROUGHOUT THE RIGHT CHEST AND SOMEWHAT DIMINISHED BREATH SOUNDS IN THE REGION OF THE RIGHT UPPER LOBE WHICH SUBSEQUENTLY CHANGED TO SIGNS OF CONSOLIDATION. SPUTUM REVEALED PNEUMOCOCCI; WBC WAS 18,600 WITH 96% POLYS AND RETURNED TO NORMAL WITH TREATMENT; BUN WAS 38 AND RETURNED TO NORMAL WITH RECOVERY. HIS FORCED VITAL CAPACITY WAS 3.1 LITERS OR 60% OF HIS PREDICTED; HIS FORCED EXPIRATORY VOLUME 1/2 SECOND WAS 2.4 LITERS, 77% OF FVC, AND FORCED EXPIRATORY VOLUME 1 SECOND WAS 2.7 LITERS, 87% OF FVC. THERE WAS A MARKED INCREASE IN ALL FUNCTIONS AFTER BRONCHODILATOR. THE FVC ROSE TO 4.3 LITERS, THE FEV 1/2 SECOND 3.4 LITERS, AND FEV 1 SECOND TO 3.8 LITERS. THE RESTRICTIVE DEFECT PERSISTED PRESUMABLY BECAUSE OF CHEST PAIN AND CONSOLIDATION IN THE RIGHT UPPER LOBE. THE CHEST X-RAY REVEALED A CONFLUENT INFILTRATE IN THE RIGHT UPPER LOBE WITH LOSS OF LUNG VOLUME INDICATIVE OF CONSOLIDATION AND ATELECTASIS. THE PATIENT WAS GIVEN CODEINE GRAINS, 1 EVERY 4 HOURS FOR CHEST PAIN, BRONCHODILATOR AND WETTING AGENTS WITH WARM MIST NEBULIZATION 4 TIMES DAILY, BUT HE WAS NOT INSTRUCTED IN PROPER BREATHING METHODS. HE BECAME AFEBRILE AFTER 3 DAYS OF PENICILLIN TREATMENT AND NEBULIZATION, BUT THE CHEST SIGNS FAILED TO CLEAR COMMENSURATELY. WHEN THE PRESSURE WAS INCREASED ON THE IPPB MACHINE, THE PATIENT WAS DIRECTED TO FOCUS HIS ATTENTION ON DEEP BREATHING IN THE RIGHT UPPER LOBE REGION, INSTRUCTIONS WERE GIVEN ABOUT THE LACK OF SIGNIFICANCE OF CHEST PAIN; THE TREATMENTS WERE INCREASED TO 6 TIMES DAILY. ROMPT CLEARING OCCURRED WITH THE EVACUATION OF LARGE AMOUNTS OF MUCO-PURULENT MATERIAL WITH PLUGS.

CASE HISTORY: [redacted]. THIS 48 YEAR OLD [redacted] MALE WAS ADMITTED WITH 72 HOUR HISTORY OF COUGH, A RIGHT PLEURITIC CHEST PAIN, FEVER, CHILLS AND RUSTY MUCOID SPUTUM. THIS MAN IS EMPLOYED AS A GARDENER AND A HOUSE WORKER. HE GIVES A HISTORY OF A KNIFE WOUND IN THE LEFT CHEST WITH A HEMOPNEUMOTHORAX WHICH RESOLVED WITHOUT COMPLICATION. ON ADMISSION, HIS BLOOD PRESSURE WAS 100/70; PULSE WAS 110; TEMPERATURE WAS 103; RESPIRATIONS WERE 26, SHALLOW, AND HE WAS COMPLAINING OF CONSIDERABLE RIGHT CHEST PAIN. THE ESSENTIAL FINDINGS WERE CONFINED TO THE CHEST. THERE WAS EVIDENCE OF SPLINTING OF RESPIRATION; BREATH SOUNDS WERE DIMINISHED, AND THERE WAS DULLNESS OVER THE REGION

OF THE RIGHT LOWER LOBE. THERE WERE ALSO RALES OVER THE REMAINDER OF THE RIGHT CHEST, BOTH INSPIRATORY AND EXPIRATORY IN CHARACTER INDICATING RETAINED BRONCHIAL SECRETIONS. PERIODICALLY, AFTER THE EVACUATION OF SECRETIONS, BREATH SOUNDS BECAME BRONCHIAL IN CHARACTER AND E TO A CHANGE WAS HEARD. THE FINDINGS WERE KNOWN TO VACILLATE BETWEEN DEPRESSED BREATH SOUNDS AND EXAGGERATED BREATH SOUNDS DEPENDING ON WHETHER OR NOT THE PATIENT EVACUATED BRONCHIAL SECRETIONS.

IT WAS NOT POSSIBLE TO DO VENTILATORY FUNCTION STUDIES ON ADMISSION BECAUSE OF THE MARKED RESTRICTION IMPOSED BY CHEST SPLINTING. HIS TREATMENT CONSISTED OF CODEINE, GRAINS 1 Q. 4 H., PROCAINE PENICILLIN, 600,000 UNITS B.I.D., ASA GRAINS, 10 Q. 4 H.. HIS WHITE BLOOD COUNT WAS 2,050 AND REMAINED ABNORMALLY LOW UNTIL THE THIRD HOSPITAL DAY WHEN IT ROSE TO 13,000. IT REACHED A MAXIMUM OF 23,000 ON THE FOURTH HOSPITAL DAY. THE DIFFERENTIAL REVEALED A MARKED SHIFT TO THE LEFT ON EACH OCCASION. THE HEMOGLOBIN WAS 12.3 GRAMS ON ADMISSION AND FELL STEADILY TO A LOW OF 6.5 GRAMS BY THE TWELFTH HOSPITAL DAY; THEN IT ROSE STEADILY THROUGH THE REMAINDER OF THE HOSPITAL COURSE. THE BUN ROSE STEADILY TO A HIGH OF 185 BY THE SEVENTH HOSPITAL DAY; THEN IT FELL STEADILY TO NORMAL. THE SERUM SODIUM WAS FOUND TO BE 123 MEQ. ON THE FIFTH HOSPITAL DAY AND WAS SLOWLY RESTORED TO NORMAL. THE URINE REVEALED LARGE AMOUNTS OF PROTEIN AND WAS LOADED WITH RED AND WHITE BLOOD CELLS GRADUALLY CLEARING THROUGH THE HOSPITAL COURSE.

HOSPITAL COURSE: FOLLOWING ADMISSION THIS PATIENT BECAME PROGRESSIVELY MORE ILL WITH SIGNS OF INCREASING AZOTEMIA, AND WHEREAS HE HAD A PREVIOUS HISTORY OF HYPERTENSION, HIS BLOOD PRESSURE RANGED BETWEEN A 100 TO 120 SYSTOLIC OVER 50 TO 70 DIASTOLIC. FOLLOWING RECOVERY HIS BLOOD PRESSURE AVERAGED 160/100. NO OXYGEN OR OTHER INHALATION THERAPY PROCEDURES WERE INSTITUTED UNTIL THE PATIENT'S SIXTH HOSPITAL DAY. OLIGURIA WAS PROGRESSIVE AND PERSISTENT DURING THE FIRST SIX DAYS OF HOSPITALIZATION WHICH WAS THE TURNING POINT OF THIS ILLNESS. RESOLUTION OF THE PULMONARY LESION WAS VERY SLOW AND INCOMPLETE, AND PULMONARY CONSULTATION WAS REQUESTED ON THE 31ST HOSPITAL DAY. THE FORCED VITAL CAPACITY WAS 3.49 LITERS; THE FORCED EXPIRATORY VOLUME 1/2 SECOND WAS 1.92 LITERS; THE FORCED EXPIRATORY VOLUME 1 SECOND WAS 2.54 LITERS; THE FORCED EXPIRATORY FLOW WAS 0-25%, 5.7 LITERS PER SECOND OR 75%; FORCED INSPIRATORY FLOW WAS 9.12 LITERS WHICH IS NORMAL, AND FORCED MID-EXPIRATORY FLOW WAS 1.65 LITERS OR 40% OF PREDICTED. A MORE VIGOROUS NEBULIZATION PROGRAM WITH ATTENTION DIRECTED AT SPECIFIC EXPANSION OF THE RIGHT MIDDLE LOBE AND RIGHT LOWER LOBE AREA SINCE CLEARING DID NOT PROCEED AS SATISFACTORILY AS DESIRED EVEN THOUGH BRONCHOSCOPY REVEALED NO BRONCHIAL ABNORMALITIES, AND BRONCHIAL IRRIGATION WAS PERFORMED. FOR THIS REASON A TRACHEAL CATHETER WAS INSERTED AND MULTIPLE INSTALLATIONS WERE UNDERTAKEN.

THIS RESULTED IN SATISFACTORY CLEARING OF THE LESION PERMITTING THE PERFORMANCE OF BRONCHOGRAPHY WHICH REVEALED MINIMAL EVIDENCE OF BRONCHIECTATIC CHANGES AND CONSIDERABLE SCARRING. SUBSEQUENT CLEARING HAS PROCEEDED SLOWLY.

CASE HISTORY: [redacted] THIS 63 YEAR OLD [redacted] FEMALE FIRST BECAME ILL [redacted]-62, WITH NAUSEA, VOMITING AND ABDOMINAL DISTENTION. SHE WAS ADMITTED TO A PRIVATE HOSPITAL WHERE SHE WAS FOUND TO BE HYPOTENSIVE. HER TREATMENT CONSISTED OF OBSERVATION, ANTIBIOTICS AND LEVOPHED. OVER A TWO WEEK PERIOD THERE WAS SLIGHT IMPROVEMENT IN STABILIZATION OF HER BLOOD PRESSURE, BUT HER GENERAL CONDITION HAD NOT IMPROVED. ON [redacted]-62, SHE WAS ADMITTED TO [redacted] FOR EVALUATION OF HER PERSISTENT ABDOMINAL DISTENTION WHICH WAS BELIEVED TO BE ON THE BASIS OF SOME FORM OF MECHANICAL OBSTRUCTION. SHE WAS FOUND TO BE MARKEDLY OBESE BUT IN NO ACUTE DISTRESS. HER VITAL SIGNS WERE STABLE AT THE TIME OF ADMISSION. CHEST X-RAY AND EKG WERE NORMAL. AN EXPLORATORY LAPAROTOMY WAS DONE ON [redacted]62; NO EXPLANATION FOR THE ABDOMINAL DISTENTION WAS FOUND. DURING THE POST-OPERATIVE PERIOD, A NASAL GASTRIC SUCTION SYSTEM WAS IN PLACE; THE PATIENT WAS SEMI-STUPOROUS AND ALSO BEGAN TO SHOW BLEEDING FROM THE BOWEL. WHEN THIS PERSISTED, A SECOND LAPAROTOMY WAS PERFORMED ON [redacted]-62. THE BLEEDING PROVED TO BE FROM MULTIPLE ULCERS OF THE STRESS TYPE. THESE WERE OVERSEWN, AND THE EXPECTED POST-OPERATIVE TREATMENT CONTINUED. FROM THIS POINT ON, THE PATIENT'S CONDITION DETERIORATED BADLY; TACHYCARDIA, SEVERE RESPIRATORY DISTRESS, EVIDENCE OF DIFFUSE OBSTRUCTIVE BREATHING WITH WHEEZING AND RALES PROMPTED THE PERFORMANCE OF A TRACHEOSTOMY. WHEN FIRST SEEN BY THE PULMONARY SERVICE ON [redacted]-62, THE PATIENT WAS GRAVELY ILL, STUPOROUS, HYPOVENTILATING, EXHIBITING EVIDENCE OF DIFFUSE AIRWAY OBSTRUCTION WITH BRONCHIAL SECRETIONS AND SIGNS OF PROFOUND CONSOLIDATION OF THE RIGHT CHEST. SHE WAS HYPOTENSIVE IN SPITE OF RECEIVING CONTINUOUS INFUSIONS OF LEVOPHED. AT THIS POINT A VIGOROUS PROGRAM OF FREQUENT INSTALLATION TO THE TRACHEOBRONCHIAL TREE, DEEP BREATHING WITH ATTENTION DIRECTED TO OBTAINING EXPANSION IN THE RIGHT CHEST, OVER-ALL HYPERVENTILATION AT LARGE LUNG VOLUMES WITH COMPENSATION BY ADDED DEAD SPACE TO PREVENT HYPOCAPNIA. IN LESS THAN 36 HOURS THE PATIENT WAS ALERT, RESPONSIVE; VITAL SIGNS WERE STABLE. IN 48 HOURS SHE WAS AFEBRILE, IMPROVED VENTILATION OF THE LUNGS IN GENERAL AND PARTICULARLY THE RIGHT LUNG WAS APPARENT. COUGH ASSISTANCE BY EXSUFFLATION WITH NEGATIVE PRESSURE AND ASPIRATION RESULTED IN THE EXPECTORATION OF LARGE AMOUNTS OF THICK MUCOPURULENT MATERIAL WITH PLUGS. IMPROVEMENT FROM THAT POINT ON WAS PROGRESSIVE, AND THE PATIENT WAS DISCHARGED ON [redacted]-62.

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