

MILITARY MEDICINE IN ITALY : Analysis of One Year's Work in a Medical Division.

BY

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THE opportunity has now arisen to copy the example of Bulmer (1943) [1] and Leishman and Kelsall [2] (1944) and to present an analysis of medical cases treated in a general hospital in Italy during 1944.

The hospital in question was until June, 1944, the most forward general hospital in the advance to Rome and, because of this, admissions were in the main direct from units in the field, i.e. field ambulances, dressing stations, and casualty clearing stations. This demanded that the hospital be primarily surgical, and a large number of the available beds was earmarked for this purpose. In the latter months of the year, as the front line moved farther forward, the hospital assumed the duties of a base unit, and the necessity for rapid disposal and evacuation in certain more chronic cases did not arise. At no time, however, did the Division become an evacuation centre for medical cases. Nevertheless, there were 11,364 discharges and transfers from the medical wards, and of these it is proposed to analyse 10,524.

TABLE I.—DISTRIBUTION OF DISEASE GROUPS (10,524 Cases)

Tropical diseases	4,097 (39.0%)
Infectious diseases	1,930 (18.3%)
Respiratory diseases	1,809 (17.2%)
Skin diseases	1,326 (12.6%)
Alimentary diseases	421 (4.0%)
Musculo-skeletal diseases	347 (3.3%)
Urogenital diseases	193 (1.8%)
Neurological diseases	174 (1.6%)
Mental diseases	142 (1.4%)
Cardiovascular diseases	70 (0.7%)
Endocrine and metabolic diseases	15 (0.1%)
	10,524

TROPICAL DISEASES

TABLE II.—4,097 CASES.

A	No. of cases	% of all Malarias
Malaria—		
Benign tertian (P)	971	40.1
Malignant tertian (P)	30	
Quartan (P)	9	
Clinical	351	14.4
Benign tertian (R)	1,034	42.8
Malignant tertian (R)	19	
Quartan (R)	8	
	2,422	

B				No. of cases	
Dysentery—					
Bacillary exudate .. .. .	..	..	..	197	
Indefinite exudate .. .. .	..	..	..	110	
Clinical .. .. .	..	..	..	56	363
				—	
Diarrhoea .. .. .	..	..	..	572	572
				—	
Amoebiasis—					
Dysenteric .. .. .	..	..	..	36	
Hepatic .. .. .	..	..	..	15	
Abscess .. .. .	..	..	..	2	53
				—	
Schistosomiasis .. .. .	..	..	..	3	3
				—	
Short-term fevers .. .. .	..	..	..	647	647
				—	
Helminthiasis .. .. .	..	..	..	35	35
				—	
Typhus .. .. .	..	..	..	2	2
				—	
Total .. .. .	..	..	..	4,097	

The incidence of malaria in the two halves of the year was much the same, with a high proportion of relapses. It is interesting to note that there was one case only of proven malignant tertian malaria in the latter half of the year, which is probably due to two factors: (1) that of the mepacrine prophylaxis, and (2) that the troops were seldom fighting in areas where this infection was endemic. The high proportion of clinical malaria (malaria diagnosed on clinical grounds only, without any laboratory confirmation) was due to the masking effect of prophylactic mepacrine, and a great percentage of these cases was diagnosed as such in the field and sent to hospital when the treatment was already initiated. In this respect one does not agree with Leishman and Kelsall, who deprecate this procedure. Early treatment in the field was demanded prior to movement to the back areas, in an endeavour to minimize the danger of any catastrophe *en route*. The numbers so diagnosed dropped considerably in the latter six months as the hospital assumed more and more the duties of a base unit, and there were only five cases in the last quarter.

There was seldom any indication to use intravenous quinine, and the majority of cases were treated by the standard quinine-mepacrine course (quinine 0.30 gramme daily for three days; mepacrine 0.8 gramme daily for two days, then 0.3 gramme daily for five days). Some of the frequent relapses of benign tertian malaria were treated with quinine-pamaquin for ten days (quinine 0.30 gramme daily; pamaquin 0.03 gramme daily). One interesting factor was that the general health of the men with relapses was excellent, and one seldom saw a man debilitated because of frequent malarial attacks.

There were few cases of chronic splenomegaly, and only one man was invalidated to the United Kingdom because of this.

DYSENTERIES.

Bacillary Dysentery.—Bacillary dysentery never presented a real problem in the Division, and all cases seen were mild and responded adequately to treatment. In the main, sulphaguanadine was used, and there were no complications.

Non-Specific Diarrhœa.—The cases of non-specific diarrhœa were more of a problem because no cause was ever found. Repeated examination of the stools and mucus failed to reveal an organism, and invariably sigmoidoscopies were negative. As a general principle, patients were returned to their units with the suggestion that they should habituate themselves to three or four loose stools a day.

Amœbic Dysentery.—Considerable care was taken to exclude amœbiasis in all cases of dysentery, and repeated stool examinations and sigmoidoscopy were done in many cases; nevertheless, there were few proven cases of amœbiasis during the year. Provocative emetine was used as a diagnostic measure, but was not of great value, although I had previously used it to good account in Palestine.

SHORT-TERM FEVERS.

The expression "short-term" covers all fevers of a few days' duration for which no cause was found and in which laboratory investigations were uninformative. It includes a large group of cases which one might justifiably have called sandfly fever, as the phlebotomus fly was found in many of the buildings in the vicinity of the hospital, and as the clinical picture was a modification of the classical sandfly-syndrome seen in Palestine. Apart from a man-power wastage, this group presented no problem, and a rapid recovery to normal health was characteristic of the illness.

TABLE III.—ACUTE INFECTIOUS DISEASES (1,930 cases)

Disease	No. of cases
Acute rheumatism	36
Benign lymphocytic meningitis	14
Chickenpox	7
Diphtheria	318
Enteric group.. .. .	24
Erysipelas	6
Glandular fever	7
Infective hepatitis	1,482
Mumps	8
Poliomyelitis	11
Scarlet fever	7
Smallpox	3
Staphylococcal septicæmia	3
Streptococcal septicæmia	1
Tuberculous meningitis	1
Undulant fever	2

1,930

ACUTE INFECTIOUS DISEASES.

Infective Hepatitis.—This disease was a problem only by virtue of its number and the necessity for long convalescence, the average length of stay

in hospital being 22.1 days prior to going to the convalescent depot. In our cases the prognosis was almost uniformly good, which was in contradistinction to the neighbouring New Zealand and American hospitals, where the sub-acute and chronic manifestations of this condition were more common. Strict attention was paid to the clinical criteria for discharge to convalescent depot. These were: bile-free urine, good appetite with no indigestion, reasonable exercise tolerance, and normal liver from the point of view of tenderness and enlargement. In the majority of cases there was no indication for any laboratory investigation either to determine the line of treatment or to establish a prognosis. In the more prolonged cases, however, it was found that a microcytic anaemia developed, and occasionally plasma proteins were found to be low, together with persistently raised serum bilirubin.

A difficult problem was created by a group of men reporting sick with vague intestinal symptoms which they stated had commenced after an attack of infective hepatitis and, in these cases, it was difficult to determine to what extent the symptoms had an organic basis. There were no informative laboratory tests of liver function, although many were tried, including cephalin flocculation and brom-sulphthalein retention. Unfortunately, liver punctures were not done, as this procedure would seem to be the best help in this clinical exercise.

It is interesting to note that out of 700 cases in the last six months of the year, not one was invalided to the United Kingdom, and only one Canadian was transferred to a Canadian hospital for evacuation.

A small series was treated with dried skimmed milk (150 grammes daily) in addition to the fat-free diet, and it was found that there was no demonstrable difference in the clinical progress of these men. Neither were we able to persuade the British soldier to tackle the gargantuan meals which our American colleagues placed before their men. In one officer who was extremely ill and exhausted as the result of persistent vomiting, an estimation of plasma protein gave a definite subnormal figure. In this case the administration of serum was accompanied by a definite improvement in his general condition, and from then on he made an uneventful recovery.

Diphtheria.—There was a marked reduction in the hospital admission of this disease in the second half of the year, when the line troops moved forward. The main essentials of treatment were early and large doses of serum and strict but *comfortable* rest in bed for a minimum of four weeks. A careful watch was established for *any* evidence of paresis, and a thorough overhaul was effected after six or seven weeks, prior to transfer to a convalescent depot.

The few cases of polyneuritis seen during the year were all admitted from outside or through the Out-Patient Department, and the complications seen in the ward, e.g. transient diplopia, dysphagia and tachycardia, were of short duration and the patients recovered completely.

Smallpox.—Only three cases of smallpox were seen in the hospital during the year, and they were all transferred to a nearby smallpox wing. The patients concerned were treated with a combination of parenteral penicillin and sulphathiazole, and made good recoveries. Lieutenant-Colonel Fleming,

in whose care these patients were, was kind enough to allow us to see them, and it was interesting that in these cases, where pustulation was severe, there was little or no residual scarring.

Anterior Poliomyelitis.—Eleven cases were seen during the year, with four deaths. They presented similar pictures to those seen previously in the Middle East. In all cases there was evidence of some mental disturbance such as restlessness, irritability, and temperamental instability, and in all cases some degree of paralysis was noted. During the same period 14 cases of benign lymphocytic meningitis were seen, and the two groups of cases were analysed. We found that examination of the cerebrospinal fluid and the differential white-cell count did *not* reveal any diagnostic pointer, and that painful muscles or muscle groups, together with paralysis, were the only real confirmations of diagnosis. As a result, we were not prepared to state that we saw any cases of abortive poliomyelitis. A more detailed account of this review will be published shortly.

TABLE IV.—RESPIRATORY DISEASES (1,809 cases)

<i>Disease</i>	<i>No. of cases</i>	<i>% of all respiratory diseases</i>
Acute diseases (81.7%)		
Acute bronchitis	238	13.0
Atypical pneumonia	294	16.0
Broncho-pneumonia	25	1.3
Lobar pneumonia	58	3.2
Coryza	196	9.2
Tonsillitis and quinsy	721	39.0
	1,532	
Chronic diseases (14.7%)		
Broncho asthma	16	0.8
Chronic bronchitis	83	4.5
Diseases of pleura	55	3.0
Spontaneous pneumothorax	8	0.4
Pulmonary tuberculosis	41	2.0
Miscellaneous	74	4.0
	277	
Total	1,809	

RESPIRATORY DISEASES.

If we include tonsillitis and quinsy within this section, it will be seen (Table IV) that a large proportion of the respiratory diseases treated during the year was acute, and was seen, in the main, in the first six months, when the front line was much closer to the hospital.

The cases of atypical pneumonia conformed to the picture that has been described by Turner [3] in his recent article. Lobar pneumonia, as such, was not common, and responded well to the sulphonamides, in marked contrast to the cases of atypical pneumonia. A small series of spontaneous pneumothorax was seen. The cases all did extremely well and were returned to duty in a lower category, with the exception of a bilateral spontaneous pneumothorax who was invalided home.

In our series of cases there was a marked disproportion between the acute and chronic groups of disease, which is very different from the figures of Bulmer and Leishman. This is reflected in the figures for evacuation to the United Kingdom, when 29 respiratory cases only were returned home on the basis of a 90 day hospitalization expectation. Of these, 20 were pulmonary tuberculosis and 8 were cases of pleural effusion.

Although the figures are not available, the impression was that the number of men with chronic bronchitis who were seen in the "Out-Patients" was less than in the Middle East, with a corresponding decrease in the necessity to down-grade.

GASTRO-INTESTINAL DISEASES.

This disease group presented its usual problems and was responsible for the evacuation to the United Kingdom of more patients than any group except the respiratory diseases. The number of cases of peptic ulceration is appreciably lower than noted either in the Middle East or India.

During the summer months a group of cases was seen with the following picture: acute gastro-intestinal upset with twenty-four to seventy-two hours fever, upper abdominal pain and tenderness, malaise and anorexia, with or without diarrhoea. These cases were diagnosed severally as acute dyspepsia or acute enteritis, and in the majority of cases cleared rapidly. Some persisted to the extent that the diagnosis of subacute cholecystitis was entertained.

There were few comments in the records of liver enlargement or tenderness, but this was noted on occasion, and there was no indication of bilinuria. When these cases were reviewed, we wondered whether some of them might have been examples of infective hepatitis *sine* jaundice.

TABLE V.—GASTRO-INTESTINAL DISEASES (421 cases).

Disease	No. of cases
Carcinoma, stomach	1
Cholecystitis	8
Duodenal ulcer	26
Dyspepsia	204
Gastric ulcer	8
Gastritis, acute	94
Gastritis, chronic	14
Hæmatemesis	3
Miscellaneous	63

Total 421

It was possible to estimate the average length of stay in hospital of certain diseases:—

Diphtheria	50.52 days
Malaria	11.44 "
Diarrhoea	11.4 "
Bacillary dysentery	17.77 "
Infective hepatitis	22.1 "

All cases of diphtheria were transferred to a convalescent depot, as were the majority of infective hepatitis patients. During the months April-June, the bulk of the malarias went to convalescent depot on the last day of their

mepacrine administration with instructions that pamaquin be given according to the prescribed routine, but this was stopped when the treatment was adjusted.

The one surprising figure was the apparent bed wastage due to diarrhoea; this was not due to the whim of any one medical officer, as three officers controlled the ward during the year and the quarterly figures remained remarkably constant. The fact that sigmoidoscopy and repeated stool examinations were carried out in most cases accounts in part for the lengthy stay.

DERMATOLOGICAL DISEASES.

Because there was no detailed analysis of dermatological cases for the first three months of the year, it is impossible to give an accurate survey of the distribution of this disease group. A total of 1,326 cases was seen during the year, and the following table shows the numbers of some of the more common diseases (out of a total of 767) treated in the last three quarters.

TABLE VI.—DERMATOLOGICAL DISEASES

<i>Disease</i>	<i>No. of cases treated in the last 3 quarters</i>
Dermatitis, acute	31
" contact	36
" infective.. .. .	53
" seborrhœic	42
" sulphonamide, light	21
" sulphonamide, seborrhœic.	21
Ecthyma	46
Epidermophytosis	12
Furunculosis	92
Impetigo	105
Psoriasis	23
Scabies	69
Tinea feet	63
Urticaria	23

637

Penicillin was used in the latter part of the year both in cream form and parenterally. Cases of impetigo and sycosis barbæ responded well to the application of the cream (250 units per c.c.), but parenterally penicillin seemed to be of little use in infected tinea or sulphonamide light dermatitis. In furunculosis the crop of boils cleared rapidly with penicillin administration, but often reappeared after a short time, and in the other conditions the penicillin appeared to assist the clearance of the secondary infection, but nothing more.

ANALYSIS OF CASES EVACUATED TO THE UNITED KINGDOM.

Detailed figures are only available for the latter six months of the year, when the criterion fixed was a minimum of ninety days hospital expectancy.

During this period, 16 officers and 90 other ranks were returned, out of a total of 4,961 patients discharged from the Division, i.e. 2.13 per cent. The figures presented do not call for any particular comment.

TABLE VII.—CASES EVACUATED TO THE UNITED KINGDOM BETWEEN JULY AND DECEMBER, 1944 (INC.) (106 cases).

<i>Disease</i>	<i>No. of cases</i>	<i>Disease</i>	<i>No. of cases</i>
Amoebiasis (1)—		Neurological (13)—	
Amoebic hepatitis	1	Epilepsy	1
Arthritis (5)—		Hypertensive encephalopathy ..	1
Arthritis, inf.	3	Sciatica	5
Spondylitis ankylopoietica ..	2	Disseminated sclerosis	2
Cardiovascular (9)—		Ac. ant. poliomyelitis	2
Chr. endocarditis, dilatation of 1st part of aorta	1	Myotonia atrophica	1
Essential hypertension	1	Contusion lower cerv. cord (C 6-8)	1
Ac. myocarditis	1	Respiratory (29)—	
Pericarditis with effusion ..	1	Pleural effusion	8
Mitral stenosis	2	Pneumothorax, spont. (bilat.) ..	1
Effort syndrome	1	Pulmonary tuberculosis	20
Thrombo-angiitis obliterans ..	1	Urogenital (8)—	
Vaso-vagal attacks	1	Renal calculus right hydronephrosis	2
Dermatological (15)—		Hydronephrosis left	2
Dermatitis cont. s/mide	3	Ureteric calculus	2
„ rec. s/light	4	Ac. nephritis	1
„ cont. textile	1	Chr. nephritis	1
„ inf. ecz.	2	Miscellaneous (11)—	
Severe chr. furunculosis	1	Addison's disease	1
Lupus erythematosum	1	Intermittent claudication	1
Psoriasis	1	Diabetes mellitus	2
Chr. inf. tinea feet and hands ..	2	Simple goitre	1
Gastro-intestinal (15)—		Toxic goitre	2
Carcinoma stomach	1	Gonorrhœa rsd. meningo-vascular syphilis	1
Duodenal ulcer	9	Staphylococcal pyæmia	1
Dyspepsia, duodenal	1	Subarachnoid hæmorrhage	1
Dyspepsia, functional	1	Varicose veins	1
Gastritis N.Y.D.	1		
Hepato-splenomegaly	2		

SUMMARY

<i>Disease group</i>	<i>Number of cases</i>	
	<i>Officers</i>	<i>Men</i>
Amoebiasis	1	—
Arthritis	2	3
Cardiovascular	1	8
Dermatological	1	14
Gastro-intestinal	5	10
Neurological	4	9
Respiratory	2	27
Urogenital	—	8
Miscellaneous	—	11
	16	90

TABLE VIII.—DEATHS.

January to December, 1944 (inc.)	
Anterior poliomyelitis	4
Subarachnoid hæmorrhage	2
Staphylococcal septicæmia	2
Typhoid	2
Tetanus	1
Tuberculous meningitis	1
Hæmolytic strep. septicæmia	1
Coronary thrombosis	1
Pulmonary infarction	1
Lobar pneumonia	1
Hepatic abscess	1
Chronic hæmatemesis gastric ulcer	1
	18

SUMMARY.

Some of the most interesting points revealed by the year's work were :—

- (1) The large proportion of relapses of benign tertian malaria.
- (2) The high incidence of infective hepatitis with its good prognosis ; the strict criteria adopted to transfer to a convalescent depot.
- (3) The pursuance of conservatism in the treatment of diphtheria, and the absence of sequelæ in the cases under our care.
- (4) The increased incidence of acute respiratory disease compared with the figures for the Middle East and India..
- (5) The difficulty experienced in the *early* diagnosis of anterior poliomyelitis when compared with cases of benign lymphocytic meningitis.
- (6) The value of penicillin in dermatological cases.

COMMENT.

This analysis of facts calls for little comment ; in addition to this work within the Division, we were permitted to supervise the many medical complications of battle casualties, and at battle periods the physicians spent an appreciable portion of the day in the surgical wards. In this respect I would like to offer my personal thanks to Lieutenant-Colonel D. W. Jolly, *O.B.E.*, *R.A.M.C.*, Officer in Charge of the Surgical Division, who gave us free entry into his Division, and to Major W. R. Trotter, *R.A.M.C.*, and the other officers in my Division for their loyalty and hard work during my stay with them. Finally I wish to thank Colonel R. W. Savage, *O.B.E.*, *M.C.*, for his permission to forward this article.

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