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AN EPIDEMIC DUE TO THE MALASSEZ AND VIGNAL BACILLUS

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Henri H. Mollaret and P. Berthon

It is not uncommon for infections of the Malassez and vignal bacillus (See Note) to attack simultaneously or successively two or three brothers and sisters in the same family [P. Lataix, H. Mollaret, M. Coulet and M. Perny (11), H. Mollaret (17), K. J. Randal and N. S. Mair (22)]. However, to date, there has been only one epidemic due to this germ; this was observed in a Swiss city by J. Lindenmann, L. Wintsch and Chr. Hedinger (13).

Note: We will use only the term "Malassez and Vignal bacillus" and not Pasteurella pseudotuberculosis or "pseudotuberculosis" because of the constant confusions which they cause.

The Malassez and Vignal bacillus was unluckily placed in the Pasteurella genus with the plague bacillus, with which it has a close relationship. Pasteurella septica and Pasteurella tularensis also belong to this genus. In fact, between the latter, there are only morphological similarities which resemble many other species. In every day use (in particular requests for serulogical examinations), there is constant confusion between Pasteurella septica and Pasteurella pseudotuberculosis, both of which have their own particular human pathology. Moreover, P. septica was isolated by G. D. Ludlam from an appendicular abscess. Thus the term Pasteurella lends itself to confusion.

The term pseudotuberculosis is just as dangerous: the Malassez and Vignal bacillus (Gram negative and non acid, non alcohol resistant) has nothing to do with the tubercle bacillus and the paratubercular bacilli any more than with Corynebacterium pseudotuberculosis (bacillus of Preisz and Nocard). It is not related to the innumerable forms of

"pseudotuberculosis," v ...se various agent ...(inert, alive, bacterial, mycotic, parasitic, etc ... are continually ...onfused with Pasteurella pseudotuberculosis.

The most usual ar ...serious confusi... are between tuberculo...s, paratuberculosis and p... dotuberculosis. ... will no l...ger cour... the number of illnesses sul ...cted to Rimifon ...er positiv... erodia ...is of "pseudotuberculosis. Henceforth we w... use only one term M...sez and Vignal bacillus ar ...here this bacill... as concerned, we hope to see the terms Pasteur... and pseudotub...losis rejected. (End of Note.)

We will report t... all epidem... which occurred suddenly in June 1961 in a country ...ling school... It could not be completely studied. After the enc... the school ... the first case was diagnosed. One can easily ...ine the dif...ties (see the lack of understanding mentioned ...er) met in ...forts to contact the families of the student... spread over ... and abroad during the vacation.

If acute mesente... adenitis assum... surgical symptomatology simulating an appendici...is attack in the ...e majority of the cases, then unusual manifestations such as a nodo... erythema or a cervical adenopathy can complicate the clinical pict... The small epidemic, due to the Malassez and Vignal bacillus, reported here, illustrates the clinical polymorphism and diagnostic difficulties. The diagnosis will be affirmed by serological and skin hypersensitivity reactions to a specific antigen.

Nevertheless, we will put in evidence 6 cases where the etiological diagnosis can be definitely proven. Other children, we found, had been operated on for "appendicitis" shortly after their return home and could not be examined by us. Was this a coincidence? The circumstances hardly favored us. The time lag of four months between the appearance of the disease and the on-the-spot investigation is perhaps responsible for our failure to find the origin of contamination.

If acute mesenteric adenitis from the bacillus of Malassez and Vignal is now classic since its description by W. Masshoff (14) and W. Knapp (7, 8, 9), then misleading forms, remote from the initial description, must also be known. Above all, it is the polymorphism of these cases found in this small epidemic which induced us to publish them here.

Case I. -- Bernard Tour..., 15 years old, was seen by one of us on 4 July 1961 for a false abdominal syndrome with ill-defined pain and diarrhea. It is difficult to be precise, but the disorders began 15

to 20 days before: progressively appearing were lack of appetite, asthenia, diarrhea (two to three bowel movements per day), vague abdominal pains and a weight loss of two and a half kg. in three weeks. These pains increased; his temperature was not taken until the day of the examination and it was then 38° C. On this day the right iliac fossa was distinctly painful, without contracture. A diagnosis of appendicitis seemed reasonable and on 4 July the operation revealed: "appendix a little swollen, a very light valvular oedema, a few inflamatory nodes in the mesentery. Appendectomy. Closure without drainage."

The following days, his temperature remained around 38° C., his general condition was good but the child was still asthenic and his diarrhea persisted.

On 10 July, five days after the operation, a serum agglutination of the Malassez and Vignal bacillus was performed; it was positive at 1/500 for type I.

Then the child was given one gram of streptomycin per day. The temperature receded and the child was well on 17 July.

A blood count on 11 July gave the following results: red cells, 4,660,000; white cells, 6,400; polynucleates: neutrophils, 60%; eosinophils, 3%; basophils, 1%; lymphocytes, 30%; monocytes, 6%.

On 15 July, skin sensitivity tests were strongly positive. Subsequent serological tests yielded the following: + 1/500 on 31 July; + 1/100 on 24 August.

This observation did not remain isolated.

Case II. — the elder brother of the patient, Francois Tour..., 17 years old, in the first part of June also had abdominal pains, diarrhea and a few attacks of fever (his temperature was not taken). Anorexia and asthenia increased and on 28 June, the first examination showed dingy, livid complexion and a loss of 5 kg. in weight. A stereotype plate of the lungs showed nothing abnormal.

The disorders persisted, particularly the diarrhea and on 4 July, the day of his brother's operation, this second patient had a definite increase of pain in the right iliac fossa. He said nothing about his condition until four days later when the pains still persisted. On 8 July, the examination showed definite tenderness at MacBurney's point. A blood count gave the following results: red cells, 4,450,000; white cells, 12,500; polynucleates: neutrophils, 68%; eosinophils, 3%; lymphocytes, 23%; monocytes, 6%.

In view of persistant digestive disorders and above all, an obvious iliac tenderness, an operation was performed on 10 July. It revealed: "an appendix a little swollen, retrocecal oedema, a definite peritoneal congestion, an oedema of the last small intestinal ansae and of Bauhin's valve. Two to three inflamatory nodes were in the mesentery opposite the end of the small intestine." The appendix was removed, the child received a gram of streptomycin and one million units of penicillin pro die for twelve days. The results were excellent. He left the clinic on 18 July.

The day of the operation, the serodiagnosis was positive at 1/500 for type I of Malassez and Vignal bacillus; a second test was positive only at 1/100 on July 31 and a third was negative on 24 August. On July 15, the skin sensitivity reaction was also strongly positive.

These two cases seemed to be in the class of familial infections of mesentery adenitis due to the Malassez and Vignal bacillus. Then the systematic epidemiological investigation performed in the entourage of these patients led us to discover a third child from the same school as the first two patients, who also for several weeks preceeding had the following history:

Case III. — Dominique Sep..., 15 years old, with no antecedent other than infectious mononucleosis seven years earlier, about 20 June complained of abdominal pains, fatigue and insomnia which brought him to the school infirmary. Nothing special was noted at this date.

On 25 June, a light disphagia and severe pain in the left angulus mandibulae appeared and suggested the beginning of the mumps.

When he returned home on 28 June, these pains were gone but the child complained of asthenia, lack of appetite, nightmares, very heavy nocturnal sweating and persistant abdominal pain in no particular location. The family doctor noted a 6 kg. weight loss and a lightly jaundiced complexion.

In the days following, his asthenia increased and fever was probable but his temperature was not taken. He perspired intensely, the pains exacerbated and localized in the epigastrium and along the lower right costa.

On 1 July, the asthenia was extreme, the patient was irritable and the jaundice was more definite.

On 8 July, the temperature was taken for the first time and it was 39° C. The sweating was profuse, the right subcostal pain was very sharp and the asthenia was considerable.

On 10 July, the temperature was still 39° C. When we saw the child on the 11th, the examination showed, other than the jaundice, a definite sensitiveness in the hepatic region and in the right iliac fossa.

The sedimentation rate accelerated: one hour, 20 mm.; two hours, 58 mm.; three hours, 76 mm. The blood count was little changed: red cells, 5,320,000; white cells, 9,800; polynucleates: neutrophils, 70%, eosinophils, 2%; basophils, 1%; lymphocytes, 25%: monocytes, 2%. But above all, the serodiagnosis, negative for the salmonellas, was positiv at 1/500 (± 1/1000) for the Malassez and Vignal bacillus (type I).

A blood culture, which showed no growth, was made on 11 July, the day when the fever drops spontaneously. On 20 July it rose to 39° C. The child was then given one gram of streptomycin per day from 11 to 29 July; he improved immediately, but then progressed slowly. Fevers of 38.2° C. and 38.5° C. accompanied by extremely abundant sweating persisted until the end of August, necessitating a resumption of the streptomycin treatment from 4 August to 15 August. In all, the child received 30 g. of streptomycin. All the disorders disappeared by the beginning of September.

The presence of these three children in the same boarding school before the start of their sickness justified an on the spot investigation. One of us went there for the first time on 24 August, when the students had already been home for a long time. It was possible to find the names of those who had shown some disorders during the last monghts of their stay at the school. In the following months this led us to examine a number of children whose various earlier disorders could not be attributed to the Malassez and Vignal bacillus, with the exception of the three following cases:

Case IV. -- On 25 August, when we first saw the child, Alain Gal..., 15 years old with no antecedant other than an appendectomy 11 years earlier, we learned the following history:

Starting in April 1961, the child had sharp abdominal pains which were not localized. They were tentatively diagnosed as spasmodic colitis and later diagnosed as nephritic colitis. The X-rays of the urinary apparatus revealed nothing abnormal. The pains ebbed spontaneously and the child complained of nothing during the month of May.

In June, he had three painful attacks. They were localized in the right hypochondrium, and accompanied by vomitting, diarrhea, swelling of the abdomen and fever with intense sweating. Each of these attacks lasted two to three days. The child complained of nothing during the interval between them and he still had an appetite. He retained a marked pallor.

On 4 July, his temperature went up to 39° C. and the next day the right iliac fossa was gurgling. On 6 July, the temperature persisted and was accompanied by the same intense and incessant sweating. A tenacious headache, myalgia and a renewed outbreak of the abdominal pain appeared the same day. Solid constipation replaced the initial diarrhea.

An examination discovered a gurgling and sensitive right iliac fossa, a percutable spleen, a definitely palpable liver, a pulse dissociated (48) from the temperature (40° C.).

Such a picture, with some nosebleeds and the discovery of three pink lenticular spots, persisted until 18 July.

Serodiagnosis for brucellosis was negative. The diagnosis of salmonellosis was made in spite of the results of the serodiagnosis of Widal: EO negative, EH + 1/260, AO negative, AH + 1/200, BO negative, BH + 1/200 and chloramphenicol was given to the patient (0.75 g. for six days then 1.50 g. for 15 days and then 0.75 g. for ten more days).

The temperature fell by steps on the third day of treatment and the child took up a normal life at the end of July.

Such is the history we learned while seeing this child in excellent health on 28 August. Two arguments cause to attribute it to the Malassez and Vignal bacillus: the positive reaction to the skin hypersensitivity test and positive seroagglutination at 1/200 with type I of this organism. Certainly this titer was at the limit of what we consider significant (yet certain authors concede 1/80, but it was quite valid considering the date of the beginning of the disease. Serological evolution confirmed this: the serodiagnosis reached only 1/50 on 6 September and was totally negative a month later.

Case V. — On 29 August, when we saw the child Georges Lam..., 12 years old and had been operated on for appendicitis a year earlier, we learned the following history:

The illness started in the early days of June and was marked by progressive fatigue, definite loss of weight, alternating constipation and diarrhea and a few painful attacks in the right iliac fossa which were intense and not lasting more than a few minutes.

When he returned home on 28 June, the child was thin, his eyes had circles under them and he had an intense pallor.

On 1 July, a fever peak followed by a chill appeared. His temperature stayed around 38° C., and was accompanied by attacks of intense sweating. This lasted until about 6 July, when painful and voluminous bilateral cervical nodes appeared.

On 9 July, a nodosum erythema, made up of six to eight characteristic elements, appeared on the anterior exterior parts of both legs. His temperature oscillated between 38.5° C. and 39.5° C. The sedimentation rate was not accelerated. A steriotype plate of the lungs showed nothing abnormal.

The child was put on penicilin and streptomycin, which caused the adenopathy to disappear in one week and a rapid improvement in his general condition.

When we saw this child on 29 August, he had received 25 g. of streptomycin and his health was excellent. The skin reaction to the antigen of the Malassez and Vignal bacillus was remarkably positive with a red halo, five cm. in diameter, itching, spontaneously sensitive and very painful when pressed. The serodiagnosis was positive at 1/100 for type I Malassez and Vignal bacillus. A second serodiagnosis was negative on 6 September.

Case VI. — It was not until 9 January, 1962 that our investigation among the students of the same school uncovered the history of the child, Dominique Gel..., 13 years. The start of his disorders is imprecise and incidious. The child complained of asthenia and of attacks of night sweating in April 1961. He returned home on 28 June, thin and tired. On 3 July he complained of erratic muscular pains. His temperature was 37.8° C. and reached 38.5° C. and then 39° C. on the days following. Upon examination, his spleen, liver and lung steriotype plate were found to be normal. The skin reaction for tuberculosis was negative, the sedimentation rate was accelerated (58 mm. in one hour); a blood count revealed 10,400 leucocytes with 67% polynucleates.

On 10 July his temperature remained at 39° C. and the serodiagnosis for salmonellosis and brucellosis was negative. For four days the child received penicillin, tetracyn and oleandomycin. His temperature was not affected by this treatment. The temperature did not return to normal for ten or twelve days and then slowly. The asthenia persisted and it was even accented. Another examination in the last days of July was negative: the hemogram was normal and only the sedimentation rate remained accelerated (58 mm. in one hour, 97 mm. in two hours).

During July and August his general condition was precarious. The child was anorexic, then (had lost about 5 kg.), easily tired and irregularly subfebril. A serodiagnosis for rickettsia was negative on August 10. His blood count was always normal and the sedimentation rate was still accelerated: one hour, 17 mm. and two hours, 43 mm. on 10 August; one hour, 57 mm.; two hours, 93 mm. on 21 August. The rate returned to normal only in September, but his general condition improved slowly.

During the end of 1961, the child perked up but tired easily and was worn out quickly during his games. He complained of violent and persistant headaches and had frequent attacks of intense pallor.

Such was the history we learned on 26 January 1962. On this date, the serodiagnosis of Malassez and Vignal bacillus was negative, but the skin hypersensitivity test was very pos[illegible]. One week after the injection a large erythematic patch surrounded by a painful oedema persisted. This result permitted us to confirm retrospectively the diagnosis of infection by the Malassez and Vignal bacillus. Considering the relatively satisfactory condition of the child, no treatment was begun. A search for the bacillus in the patient's stools had been made on principle and was negative. The child returned to class and a normal life until March. Again, in the evening, a few febril attacks with pallor, chills and violent, persistant headaches reappeared. On 9 March, in particular, he had a fever of 39.8° C. accompanied by extreme pallor. His temperature dropped spontaneously the next day and a hemoculture could not be made at the correct time. Because of this relapse, the child was put on streptomycin and chloramphenicol for fifteen days. The improvement was spectacular and all the disorders disappeared by the end of April.

COMMENTARY

From a diagnostic point of view, ~~two arguments~~, serology and skin tests, permit ~~us to accuse~~ the Malassez and Vignal bacillus in the six reported observations. In neither the first two cases in which no nodular samples were taken nor the last four cases in which blood and stool cultures were not made at the correct time, was it possible to obtain the major argument: the isolation of the causitive agent.

Nevertheless, we give full value to the antibody titer found in these patients ~~(certainly weak titers in some~~ because of the late date of ~~the samples~~, but significant when taking into account the transient nature of these antibodies and the fact the successive examinations showed us the evolution of the ~~titers~~, which is more significant than a constant titer). We also give full value to the skin hypersensivity test ~~results. With the experience we~~ now have with the latter, we can ~~affirm its~~ specificity. The major interest of this proof is to tie the long persistance of dermal sensitivity to the Malassez and Vignal bacillus to a retrospective diagnosis several years after recovery (19).

From the clinical view point, these 6 observations show the extreme polymorphism of the infection by the Malassez and Vignal bacillus. They also show the absence of boundaries between the localized forms (mesenteric or iliac) and the generalized forms.

The first two observations to in the typical classification of mesenteric adenitis due to the Malassez and Vignal bacillus. But, let us underline here the existence of a premonitory phase of several weeks which consisted of alteration of the general condition anorexia, loss of weight and diarrhea. This phase must be reconciled to the age of these patients (17 and 15 years old respectively). While the usual picture in a young child is that of an acute appendicular attack, we believe that more frequently a large child will show the existence of a premonitory phase, which is more or less long and dominated by digestive signs. In the large child and even more in the adult, the digestive disorders in the long run dominate the clinical picture and pose as paratyphoid, colitis and gastroenteritis [W. Knapp (7), O. H. Braun and K. Muller (2), F. Kuhlmann and W. Herrmann (10), H. Mollaret (16)].

Our case IV, where headaches, diarrhea, gurgling in the right iliac fossa, epistaxis, dissociation of pulse and temperature, hepato-splenomegalia and pink lenticular spots are found, best shows how far the analogy with Salmonellosis can go. Such cases are not rare. Among others we report the following observation from Dr. L. Serfaty (Chatillon) concerning a boy, 15 and a half years old. The boy, after complaining of vague abdominal disorders for five to six weeks, presented a painful abdominal syndrome with liquid diarrhea (profuse and discolored), 39°C. temperature, cephalagia besides a real "tuphos." (See translator's Note.) The findings of an examination were negative, with the exception of a small palpable mass in the right iliac fossa. The liver and spleen were normal and the blood count was unchanged. After one week of tifomycin treatment, the diarrhea disappeared and the temperature fell in steps. The pain and the perceptable mass disappeared respectively after two and four weeks (a drop in blood pressure and a muffling of the heart noises were noted on the tenth day). Sero agglutination of the Malassez and Vignal bacillus (type I) was positive at 1/1000 on 11 December, at 1/200 on 27 December and negative on 27 January. The skin hypersensivity test was positive. A simultaneous diarrhetic episode in the mother of this child, in which she had an equally positive skin reaction, must also be mentioned. Translator's note: "Tuphos" is an untranslatable French term. It refers to the slight stupor or daze that a typhus patient is in. Tuphos is used here, in a broad sense, to refer to the dazed condition of the patient.

Our fifth case, whose history begins as a common mesenteric adenolymphitis with its antecedent painful attacks, short and repeated, involves two new symptoms which must be underlined: nodosum erythema and cervical adenopathy.

Nodosum erythema due to the Malassez and Vignal bacillus does not seem to be rare: R. Morger (21) published a case occurring four days after an operation. We have reported five others (20). This particular manifestation of the infection by the bacillus of Malassez and Vignal should

be known much more than it is in the cases where it remains clinically isolated. This mesenteric symptomatology is missing completely or is refound retrospectively only by meticulous examination. The nodosum erythema with positive serology and skin hypersensitivity reaction can by itself summarize all the disease, which makes its appearance the days following the operation. R. Morger sees in this symptom an expression of a state of hyperegia. We are even more of this opinion because the patients, in which we have observed a nodosum erythema, respond in a particularly intense manner to the skin hypersensitivity test.

The cervical adenopathies presented in our cases III and V are not exceptional either. As early as 1925, A. L. Lawrynowicz (12) described a hypertrophy of cervical nodes in a little girl, six years old. In 1949, J. Burianek and coll. (3) found the same in a 36 year old woman suffering from septicemia due to the Malassez and Vignal bacillus. In 1957, in the second French observation of mesenteric adenitis due to the Malassez and Vignal bacillus, P. Ingelrans and coll. (6) noted the presence of cervical and inguinal adenopathies. Two years later, G. Girard and coll. (5) observed, on a lung steriotype plate of a similar case: "a chimney like shadow in the right paratracheal area posing the problem of mediastinal adenopathy similar in nature to that of mesenteric adenitis."

In March 1961, while in the service of Pr. Sztaba at Gdansk, we found volumnous submaxillary and bilateral cervical adenopathies in a four year old girl who had just been operated on. At the Alder Hey Children's Hospital in Liverpool, J. Bouton and E. G. Hall made an observation, not yet published, of a case quite similar to our fifth case: a little girl simultaneously presented mesenteric adenitis, nodosom erythema and cervical adenopathy.

One imagines the diagnostic difficulties presented by the association of these last two symptoms when the signs in the right iliac fossa are missing, and alteration of the general condition and sweating attacks are added.

The latter two have assumed an extraordinary intensity in our cases III, IV, VI. We had already found them with this same intensity in other patients as well as the fits of extreme pallor observed in a patient of F. de Preaumont (4).

Our cases III and VI fit in the framework of generalized forms, W. Masshoff (15) has shown recently that they are not far removed from the digestive forms and that they include all the intermediaries between the typhosepticemic form of the German authors (which have jaundice and hepatosplenic micorabscesses) and the drawn out forms with better prognosis.

Already the observations of A. Lorey, K. Saisawa, D. Roman, W. Neugebauer, O. Paul and O. Weltmann, E. Dujardin-Beaumetz, N. Topping,

E. Moss and J. Battle, etc. who have written of fatal septicemic forms, are being opposed by those of J. Burianek, Mason and K. F. Meyer, de Lawrynowicz, W. Fischer, etc. who have written about the long course (month or year) forms and the absence of the fatality issue. The observation of Knapp, isolating by hemoculture the bacillus of Malassez and Vignal in a child fifteen days after surgery for mesenteric adenitis, shows equally well the absence of boundaries between the septicemic forms and the localized forms as between the most serious forms and the spontaneously benign forms.

Our case III, with its light jaundice and its right subcostal pain recalls, but in a minor way and with favorable issue, the jaundiced forms already cited by Lorey, Saisawa, Paul and Weltmann, Topping, etc.

Even more shaded in the symptomatology is our last case. As in the third, it shows the existance of drawn out forms of mixed symptomatology where only the laboratory can establish the etiological proof.

From an epidemiological angle, our investigation, at our patients' school, for the origin of contamination yielded no definite result. Nevertheless, certain presumptive elements need to be reported:

Initially, we were led to suspect a water origin. The start of of disorders in the first three children appeared just a little after they had participated in the cleaning out of a large pond containing the bodies of a young rabbit, a chicken and three rats. The water samples we took did not yield the bacillus. Considering this and the starting date of the illness of the fourth child, which was two months before this cleaning, we searched elsewhere.

No particular morbidity was found among the sheep, swine, chickens, guinea fowls, rabbits and swans of the school. The skin hypersensitivity tests in the personnel caring for these animals, were negative as were the stool cultures.

We were able to find only three pertinent coincidences:

First of all, work on the sewer took place during the winter 1960-61. We wondered if this could not cause important movements in the rat population. Rats can be healthy carriers of the Malassez and Vignal bacillus and spread it in their urine and stools. We have been struck by analogous coincidences, since the number of registered cases in France occur in the proximity of public waste outlets, slaughter houses and where there was work in the sewers.

Secondly, we found frequent intrusions into the school park by vagrant cats. (Twenty-five were destroyed in 1960 and fifteen from January to May 1961). We consider these cats as an intermediary link between man and the natural reservoirs of the bacillus.

Thirdly, we found that during the winter the school surroundings had been stocked with hares by a hunting society. Knowing the frequence of latent infection in the hare (18) and the role of their transplanting in the appearance of the disease, we cannot help but be struck with the coincidence. The occurrence, in previously unscathed game preserves of a Malassez and Vignal bacillus epizooty after the introduction of imported hares is too classic /C. Avanzi (1), etc./ and too frequent for this hypothesis not to be advanced here.

All of these points are perhaps just coincidental, nevertheless, we put them in the record.

To finish our investigation, it was attempted to retrospectively track down possible unnoticed forms in the 300 students of the school. At the start of the school year we wished to perform hypersensitivity tests. An administrative ban kept us from doing this on a large scale. The skin hypersensitivity test could be performed on only 14 students and was positive in one of them.

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