

Article

Biographical Approach to Patients Consulting for Presumed Lyme Disease: a contribution to the understanding of patient pathways in symptom-based diseases.

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Abstract: Media coverage of Lyme disease (LD) has led to an increase in consultations for presumed LD in Europe. However, LD is confirmed in only 10-20% of patients, with a significant number remaining in a diagnostic dead-end. The objective of our study was to understand the genesis of the LD hypothesis in care pathways. In 2019, 30 patients from a prospective cohort consulting in the infectious diseases department at University Hospital in Marseille for presumed LD were recruited for semi-structured interviews. The inclusion criteria were: suffering from subjective symptoms for 6 months, no clinical or paraclinical argument suggesting current LD. The patients' medical trajectories were collected using a biographical approach. A majority of participants were convinced they had LD despite the lack of medical evidence and the scepticism of their referring GP. The diagnosis of Lyme disease was primarily triggered by identification with clinical stories circulating in the media. Most of participants had conducted the diagnostic investigation themselves. Diagnostic wandering in the diagnostic process suggests a failure of modern medicine to propose solutions for medically unexplained symptoms. Clinicians should systematically explore patients' etiologic representations in a patient-centred care approach.

Keywords: Lyme borreliosis, post-Lyme disease syndrome, medically unexplained symptoms, social sciences, medical uncertainty.

1. Introduction

Lyme disease (LD), which received little media coverage in France until the end of the 2000s, is now the subject of a controversy [1], with sometimes virulent public debates. Doctors and patients represented by associations [2], demand recognition of a chronic form of the disease associated with non-specific symptoms such as pain, asthenia, and concentration disorders [3]. In this context, long-term antibiotic treatments are often prescribed despite the absence of proven benefits and may cause serious adverse reactions and even death in some patients [4-8].

To date, there is no evidence in humans pointing towards the diagnostic criteria of a possible chronic LD [9]. However, media coverage of this disease has led to an increase in consultations for presumed LD in France and in Europe [10,11]. In France, annual incidence is estimated at around 33,000 cases and presents strong regional disparities, with the incidence being very low around the Mediterranean area, where the vector is rare [12].

Series of patients consulting with a suspicion of LD result in a confirmed diagnosis of LD for only 10 to 20%, while significant numbers of patients (6-26%) with non-specific

symptoms (arthralgia, asthenia, myalgia, headaches) remain undiagnosed at the end of the etiological investigation [13–15].

In a context of easier access to medical information, media coverage of many health issues, and official discourse promoting patient autonomy [16], this paradigm has been begun to be reversed the last decades: physicians are now confronted with patients who produce diagnoses and seek to confirm them through the use of health professionals [17].

Using a biographical approach, we sought to describe the diagnostic pathways of patients who initially consulted for a suspicion of LD and for whom this diagnosis had been rejected by an infectiologist at the time of their inclusion in the study. We wanted to better understand firstly the influence of the social environment on the genesis of LD hypothesis; secondly the role of the patient in the diagnostic investigation.

2. Materials and Methods

2.1 Design and Study Setting

This is a qualitative single-centre study. Participants were recruited from a regional clinical research programme dedicated to tick-borne diseases led by University Hospital Institute (IHU) Méditerranée Infections in Marseille. This project was approved by an ethical committee. The reporting of this study follows the COREQ guidelines (figure A1).

Between 1 May and 30 June 2019, we recruited the first 30 consecutive patients from a prospective cohort consulting in infectious diseases department at the IHU for presumed LD. Patients were eligible to participate if they were 18 years or older, French-speaking, and able to provide informed consent. They had all previously been seen in consultation with a senior infectiologist. Inclusion criteria were as follows: presenting non-specific symptoms such as fatigue, difficulty concentrating, joint, muscle or headache pain for at least six months; having a negative Lyme serology; and no evidence for an organic differential diagnosis.

2.2 Interview guide and biographical approach

The interview guide (figure A2) was developed and iteratively revised during pre-testing with five older adults (not included in the study). The semi-structured interviews followed a biographical approach, using an interview guide covering the history of symptoms and referrals to different medical specialties, detailed diagnostic pathway, including the history of the differential diagnoses, genesis of the LD diagnosis, the patient's prioritisation of the most likely diagnostic hypotheses, and the associated diagnostic degree of certainty (low, medium, high). The interview guide also covered relationships with health professionals, in particular general practitioners (GPs), their role in conducting the diagnostic enquiry, the impact of symptoms on daily life, and finally patients' views of the disease. The biographical approach consisted of collecting patients' trajectories by combining sequences from the interviewee's life and developing themes related to the subject of study [18]. It uses a life-calendar (figure A3), a retrospective data collection tool highlighting the chronological order and proximity of events, important transitions in trajectories and makes it possible to jointly analyse several aspects of the patient's life. The ultimate objective of biographical analysis is to chronologically reconstruct the sequence of events in a patient's life and health pathway to place the current situation (diagnostic status) in light of the entire past trajectory (e.g. referrals to various specialist physicians, treatments, exposure to Lyme disease).

2.3 Data collection and analysis

One male investigator (RL) trained in qualitative methods (GP with a master's degree in social sciences) conducted all interviews in person. The investigator had no direct clinical relationship with any participant. Interviews occurred in a private meeting room at the IHU after a scheduled follow-up consultation. The interviews were systematically audio recorded with the patients' agreement. We also used personal documents spontaneously provided by the patient (medical files, illness diary etc) and investigator' field notes. Interviews were fully transcribed, coded and analysed using the NVivo qualitative data software. All the collected data were systematically cross-checked. Two investigators (RL and CE, the clinician who performed the medical consultation) independently coded all transcripts. Differences were reconciled by consensus until 100% agreement was reached.

The clinical profile category was defined according to the patient's prioritisation of symptoms (table A2), in decreasing order of their impact on their quality of life. The category "diagnostic survey coordinator" was coded from the intersection of the following elements: the person who asked for serology test, the patient's deliberate search for a "pro-Lyme doctor" to confirm the diagnosis, spontaneous consultation of specialists (without referral by the GP), particularly infectious disease consultations, presence/absence of a referring GP (or other referring physician) and finally spontaneous statements during the qualitative interview (e.g. "I conducted the investigation"). The category "pro-Lyme caregiver" was chosen if the patient reported during their pathway at least one consultation with a "specialist in chronic LD", whether they were a doctor or other caregiver providing non-conventional medicines (naturopath, kinesiologist, nutrition-therapist). The category of "Lyme activist" was chosen if the patient was a member of an association or an active member of a forum dedicated to LD.

3. Results

3.1 Participants' sociodemographic and clinical characteristics:

We included 30 patients. Participants were mainly women with an average age of 47.3 years, with a high education level. Interviews lasted from 44 minutes to 85 minutes. The "pain" profile was predominant. The history of the disease was long with an average symptom duration of 8.5 years (Tables A1 and A2).

3.2 Genesis of the Lyme Disease diagnostic hypothesis

A majority of patients did not report a history of tick bites. For these patients, the main types of potential exposure to the Lyme vector were the presence of ticks in their environment, contact with traditionally tick-carrying animals, and having spent time in a region perceived to be endemic like forests in the north-east of France.

- Do you remember a tick bite? (I)

- No, none E: and have you ever seen a tick in your environment? P: Yes, on my dogs and it happened to me to have to remove ticks (P1).

- And there were ticks, do you remember? (I)

- No, but I remember that as a child we used to spend our summers in the forests of the Ukraine, which was known to be a tick reservoir, but I never saw any. (P18)

The hypothesis of "chronic LD" in the diagnostic pathway/trajectory of patients was most often triggered by their identification with other patients' clinical narratives circulating on different media and social networks.

-I stumbled upon forums of patients who suffered from the same symptoms. One thing leading to another, they directed me to therapists who were able to listen to your history and take into consideration the human being that you are, because for me, Lyme diagnosis is written in black and white so I don't allow anyone to discuss it (P2)

-In this TV show, I saw myself in one of the patients who described the same pain and fatigue that no one explains while the diagnosis is obvious (P4)

- Everything leads back to Lyme when you look for information on the fibromyalgia forums, all the "fibros" encourage you to have a Lyme test (P4)

Other circumstances triggered diagnostic investigations including presence of false positive Lyme serology during a medical check-up, family or close friends raising the question of LD and finally, the hypothesis evoked by their doctors.

All patients had previously undergone serological testing in a laboratory. For a majority of patients, the test was negative, for the others, the result was considered as a false positive by the clinician according to international and national guidelines [19,20]. Of these latter patients, 7 had used laboratories whose techniques were not validated by international standards: private laboratories in Germany, "alternative" private French laboratories, or via a self-test kit obtained on the internet, all recommended by the websites of various Lyme associations. In addition, nearly half of patients had received an antibiotic therapy for "chronic Lyme disease", which was not justified on the basis of current recommendations. Majority of patients stated that they believed the diagnosis of LD to be the main explanation for their symptoms, and considered this diagnosis to be highly certain. Patients with a "Lyme activist" profil were maginal in our sample. Serology was often prescribed at the request of patients, despite the fact that their referring doctors were sceptical about the Lyme hypothesis. (Table A3).

3.3 Additional diseases / a disease syndrome that unifies the different symptom

For some patients LD was an additional disease necessary to explain all the symptoms when the diagnosis of the doctor does not explain everything, when the singular picture of the patient does not fit into the general framework of one disease:

- I accept the diagnosis of fibromyalgia but I have something else in addition. (P4)-*
- I know I have multiple sclerosis plus something else (...) my symptoms are not typical of multiple sclerosis, especially the pain .. (P26)*
- I'm afraid (...) the bite activated my autoimmune disease! (P13)*

3.4 Diagnostic pathway

During their diagnostic trajectory, patients had consulted 3.7 different specialists on average, 15 consulted a psychiatrist. 18 used complementary therapies (naturopathy, homeopathy, kinesiology, etc.) and 14 consulted a pain relief centre.

Regarding the history of differential diagnoses, Most of patients mentioned the diagnosis of fibromyalgia, but were rejecting it because they considered it to be a "psychiatrization" of their symptoms.

- *I refuse to be told that all this does not exist, that it is a figment of the imagination (P13)*
- *I'm tired of being told it's all in my head (P2)*

In the end, 23 patients coordinated the etiological investigation; for the others, the enquiry was conducted by their GP (4) or by their referring specialist (3) (table A4).

4. Discussion

4.1 When the patient makes the diagnosis

A large majority of patients (with the participation of their entourage) were at the origin of the LD hypothesis. The important role of narratives from other patients on social networks or in the media supports our first hypothesis regarding the role of social environment in the genesis of “diagnostic hypotheses”. These stories are particularly valued by patients in situations marked by the absence of a satisfactory diagnostic proposal from doctors. The proliferation of personal stories on the internet illustrates this type of bias. The general public refers to this type of information source much more often, to the detriment of more “objective” and official sources [16,21]. This is in line with the results of a qualitative survey performed in Connecticut (USA), which reported that patients with LD placed greater trust in the experiences of close relatives who had contracted Lyme disease than in information disseminated by health professionals and health authorities[22]. Moreover, patients could find online tools to back up their hypotheses.

A majority of patients managed to convince their GP to prescribe a Lyme serology test, illustrating that the medical decision is no longer monopolised by doctors. This reflects the contemporary role of patients claiming the legitimacy of a diagnosis based on their own experience [23,24]. The recognition of the patients’ diagnostic proactivity has recently been the subject of studies in the field of social sciences of health [17,25–27]. Fainzang showed that diagnostic work was more particularly exercised by patients when physicians are unable to elucidate the causes of their disorders than when they are, with patients taking charge of the entire sequence from self-diagnosis to self-prescribing [27].

4.2 A diagnosis set in advance”

For the first time, our study explores the level of conviction associated with LD diagnosis.

A large majority of patients did not report a tick bite, but often mentioned that they may have been bitten without noticing or remembering. A negative serology was not sufficient to completely exclude the diagnosis of LD and, in the case of uncertain serologies, patients often gave more weight to the positivity of the ELISA test than to a negative Western Blot reference test. The “Lyme activist” profile, and/or an encounter with a “pro-Lyme” caregiver concerned a minority of the pathways described in this study and cannot by itself explain this high level of conviction observed among participants.

The attribution of symptoms to a well-identified external (environmental) cause is well described in the literature on LD and more generally on somatoform disorders [28–30]. The infectious origin is often guilt-reducing for patient and offers the prospect of a potentially curable disease.

- *I know deep down that I have multiple sclerosis but I am afraid of its evolution. I prefer to have a phony disease like Lyme (P30)*
- *my rheumatologist also wants a diagnosis that we can treat!(P17).*

Moreover, the higher level of certainty about the LD hypothesis in patients leading their own diagnostic pathway suggests they had a pre-established etiological scenario and were seeking to put together the different elements of the medical puzzle to demonstrate this. In cognitive psychology, this phenomenon is known as “confirmation bias” and describes our tendency to seek, interpret, promote, and recall information that confirms or supports our previous personal beliefs or values [31].

4.3 Disappointment with science and scientific controversies

The current controversies over the chronic form of LD remind us of the strength of the population’s contemporary disenchantment with science, as highlighted by Ulrich Beck [16,32]. Both the general population and the medical community are disappointed in modern science, which generates a multitude of highly specialised, fragmented, temporary, and often contradictory results, especially in the biomedical field. This is especially the case in the French context of the Lyme controversy. In 2018, French scientific societies and the National Academy of Medicine refused to approve the recommendations on LD published by the Haute Autorité de Santé, a French government agency [33,34]. Indeed, French scientific societies (including French College of General Practitioners) did not recognise the new clinical entity called “symptom/polymorphic syndrome persisting after a possible tick bite” arguing that the term was not based on scientific evidence and opened the door to over-diagnosis and inappropriate antibiotic prescriptions [34,35].

4.5 Strengths and limitations

The originality of this study lies in the population studied which consists of patients who have reached a diagnostic dead-end. In this frequent situation regarding LD, we showed that most of the patients were the driving force of the etiological investigations of their symptoms. Despite medical evidence, almost half of them were strongly convinced that they were suffering from LD.

To our knowledge, this study was also the first to apply a biographical approach to the analysis of the diagnostic trajectories of patients consulting in infectious disease wards for a suspected LD. This approach allowed for the joint analysis of contextualised self-reported data and clinical data from medical records. The interviews, by focusing on the overlap between life, medical and clinical events, highlighted the two dimensions at work in any care pathway: biology and biography [36].

As for any qualitative study, it’s hard to extrapolate the findings but our sample size (n=30) was the largest to date among the international qualitative research published on the subject [28,29,37–39].

4.6 Comparison with existing literature

A previous qualitative study involving 13 patients in the Savoy region of France reported the same results on the role of the internet and the media in the care pathways of these patients and in triggering their suspicion of chronic LD [28]. However, the method of recruitment through a patient association led to an over-representation of patients who had activist attitudes, who were likely to support conspiracy theories, who were explicitly reported to be in conflict with the medical profession, and who had a relationship with “pro-Lyme caregivers”, than our study population. Other international qualitative studies on the subject focused on the experience and impact of the disease in the daily life of patients [29,37,38].

5. Conclusions

The patients in our study were the main actors in their diagnostic enquiry. The role of physicians appears paradoxical. Although patients frequently solicited them (number of referrals), physicians were powerless, or unwilling, to offer structured care pathways.

The clinician's ability to listen to the patient's disease history rarely includes consideration of the patient's diagnostic experience [17]. By opposing the doctor as the sole custodian of the medical diagnosis [40], to patients reduced to the subjectivity of their symptoms, run the risk of seeing the development of diagnostic dead-end or parallel diagnostic pathways. Dissatisfaction with the medical diagnosis is the classic explanation for the use of alternative medicine [41,42]. Finally, patient empowerment [43], in the LD diagnosis process suggest a failure of mainstream medicine to propose solutions for symptoms that it cannot explain because of lack of evidence when the limits of medical knowledge are attained. In conclusion, clinicians should systematically explore the etiological representations [39] of their patients in a patient-centred care approach in order to create the conditions for a therapeutic alliance.

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Funding acquisition : CE

Conceptualization and design: RL, PV, PW, CE

Methodology : RL

Collection of data and formal analyses: RL, CE.

Writing—original draft preparation: RL, CE.

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Informed Consent Statement: Written Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author.

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