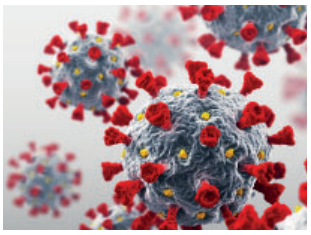
education

FROM THE JOURNALS Edited highlights of weekly research reviews on https://bit.ly/2PLtil8

Genetic susceptibility to covid-19?



To get into human cells, the SARS-CoV-2 viral spike protein binds to the human ACE2 receptor. This process depends on a human enzyme called TMPRSS2. TMPRSS2 is differentially expressed in different ethnic groups so could be responsible for the racial variation in covid-19 infection and death rates.

How reliable is this information? We don't yet know. All Bunyavanich and colleagues did was look at nasal epithelium collected from more than 300 people with asthma in 2015 to 2018 for research about asthma biomarkers and report the difference in nasal gene expression of the enzyme. They found that TMPRSS2 expression was higher in black people compared with Asian, Latina, mixed race, and white people. This observation is interesting, but it doesn't directly tell us anything about covid-19 susceptibility.

JAMA doi:10.1001/jama.2020.17386

The Russian vaccine

Logunov and colleagues present data from 76 volunteers who received a recombinant adenovirus vaccine containing the gene for the viral spike protein. The vaccine had two adenovirus components. Two formulations were tested. The treatment regimen was the first vaccine component followed by the second component three weeks later.

This wasn't a randomised trial, but in this small number (of primarily healthy young men) there were no serious adverse events and there was appropriate immune response seen afterwards. There were mild adverse events (such as pain at the injection site, hyperthermia, and headache), but, without a placebo-control, it is not possible to know how much of this is attributable to the vaccine. These data are promising, but the next stage is to demonstrate actual protection against the virus.

Lancet doi:10.1016/S0140-6736(20)31866-3

Exploring confidence in vaccines worldwide

This modelling study estimated confidence in the importance, safety, and effectiveness of vaccines using surveys from 2015 to 2019 across 149 countries. This is topical, given the vaccines that are being developed to tackle the covid-19 pandemic.

The good news for Europe is that vaccine confidence has increased over time, although recently there was a loss in confidence in Poland, where there was a highly organised anti-vaccine movement. The Philippines and Indonesia experienced a dramatic decrease in vaccine confidence, and one of the lowest ranked countries in vaccine confidence was Japan. I recommend reading the discussion of this paper as it elegantly describes the story behind many such observations.

Lancet doi:10.1016/S0140-6736(20)31558-0

G-CSF for covid-19?

Covid-19 is associated with lymphopenia. The hypothesis that recombinant granulocyte colony-stimulating factor (G-CSF) might benefit people with severe covid-19 because it increases the lymphocyte count isn't unreasonable. The next step was a randomised controlled trial. This was not a blinded trial unfortunately. Anyway, the study found no benefit for time to clinical improvement (the primary endpoint).

While it remains possible that the trial was too small (and the patients not comorbid enough due to the exclusion criteria) to detect a benefit of G-CSF, it seems unlikely. One of the good things about the trial design though was use of a seven-category ordinal scale for the primary outcome. This helps to get information from the participants, because an outcome such as death requires many more patients to demonstrate a difference. The downside, however, is that the outcome assessment should really be done blinded.

JAMA Intern Med doi:10.1001/jamainternmed.2020.5503

Removing tracheostomies

Tracheostomies are traditionally decannulated after a trial of capping. It gets the job done, but it's a conservative approach. This large, multicentre, Spanish trial provides evidence for a more effective method. Patients who had been weaned from mechanical ventilation were randomised to one of two decannulation strategies: decannulation timing based on the required frequency of suction plus continuous high flow oxygen, or standard care (decannulation after a 24 hour trial of capping the tube with intermittent high flow oxygen).

The suction-based strategy reduced the time to decannulation (the primary endpoint) while also reducing adverse events such as pneumonia and reducing the length of stay in hospital. One major limitation of this trial is the potential for bias after randomisation because staff were aware of which group the patients were in. Nevertheless, this is strong evidence in support of a suction-frequency strategy for decannulation.

N Engl J Med doi:10.1056/NEJMoa2010834

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UNCERTAINTIES

Do PROMS improve outcomes in patients with depression in primary care?

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This is one of a series of occasional articles that highlight areas of practice where management lacks convincing supporting evidence. The series advisers are Sera Tort, clinical editor, Nai Ming Lai, clinical editor, and David Tovey, editor in chief, the Cochrane Library. You can read more about how to prepare and submit an Education article on our Instructions for Authors pages: https://www.bmj.com/about-bmj/resources-authors/article-types

CPD READING

0.5 HOURS

Patient reported outcome measures (PROMs) are questionnaires or brief interviews assessing patients' symptoms, social functioning, and health related quality of life.[1] PROMs provide feedback on patients' responses to treatment, so healthcare practitioners may then adjust treatment or refer for alternative interventions.[1] Their use in the assessment of severity of depression and monitoring is widely promoted in primary care, psychological therapy, and mental healthcare settings in the UK, US, and Europe. In the NHS England Improving Access to Psychological Therapies (IAPT) programme, PROMs for depression, anxiety, and social functioning are routinely administered at every treatment session.[2]

PROMs are relatively quick surrogate measures for longer, interview based assessments of symptoms and functioning. PROMs provide standardised results, readily understandable to other practitioners, and to patients themselves after brief explanations of their meaning. Similar measures can be used to screen for depression and aid diagnosis, but here we focus on their use in assessing initial severity and response to treatment.

Several PROMs are used for monitoring treatment outcomes in adults with common mental health disorders including depression and anxiety (box 1). It is uncertain whether routine monitoring with PROMs leads to changes in treatment and improves patient outcomes in terms of symptoms, individual functioning, and social functioning in depression.[3]

WHAT YOU NEED TO KNOW

- Patient reported outcome measures (PROMS) questionnaires are used in the initial assessment of patients with depression and for monitoring progress with treatment
- There is insufficient evidence, and mostly of low quality, that routine monitoring with PROMS in primary care leads to improvement in outcomes in terms of symptoms of depression
- Routine use of PROMs in primary care for depression is not established, but they may be beneficial in certain patients who are not able to articulate their symptoms or are unsure if they have depression, and can help patients feel more involved in their care

What is the evidence of uncertainty?

A Cochrane review found insufficient evidence on using PROMS in primary care for monitoring outcomes of treatment in patients with depression and anxiety.[3] There is some evidence of benefit for their use in specialist mental health and psychological therapy services for routine monitoring of symptoms, based on two meta-analyses of trials[4 5] and a recent study in the IAPT services in the UK.[6] This is particularly so for patients at high risk of treatment failure based on initial response to therapy. The evidence is, however, of low quality.

A Cochrane review (17 studies, 8787 participants) reported a lack of evidence that using PROMS for common mental health disorders improved patient symptoms or led to changing their management over the course of their treatment.[3] The quality of evidence was low as all included studies were at high risk of bias with considerable attrition at follow-up. Only two studies were conducted in primary care, both in the US, and they reported opposite findings in terms of both changes in management and improvement in outcomes.[3 7 8] Few studies reported impact on health related quality of life and social functioning. Only one study reported on adverse events, with no immediate suicide risk discerned.

Between 2009 and 2013, the NHS general practitioner (GP) Quality and Outcomes Framework financially incentivised the follow-up assessment of depression with PROMs at five to 12 weeks after diagnosis.[12] Examination of the records of 604 patients assessed using the PHQ-9 suggested that GP treatment changes (increasing or switching antidepressants, or specialist referrals) were nearly five times as likely for patients who showed an inadequate response to initial treatment on the questionnaire at follow-up.[12] However, patient outcomes after treatment changes were not reported.

Two recent trials in primary care have reported conflicting findings on the value of PROMS in improving depression symptoms.[9 10] These studies were both small and probably underpowered to detect clinically meaningful changes in outcomes.

Box 1 | PROMs used to monitor the treatment of depression and of anxiety*

- *Depressive symptoms*—Such as the Patient Health Questionnaire (PHQ-9), Beck Depression Inventory (BDI or BDI-II), Hospital Anxiety and Depression Scale questionnaire (HADS) depression subscale (HAD-D), and Montgomery-Asberg Depression Rating Scale (MADRS)
- *Anxiety symptoms*—Such as the Generalised Anxiety Disorder questionnaire (GAD-7), HADS anxiety subscale (HAD-A), and Beck Anxiety Inventory (BAI)
- *Social functioning*—Such as the Work and Social Adjustment Scale (WSAS) or the Social Adjustment Scale (SAS)
- *Depression and anxiety combined*—Such as the HADS, the Hopkins symptom checklist (SCL-90), or the Mini-International Neuropsychiatric Interview (MINI)
- *Combinations of symptoms, individual functioning, and social functioning*—Such as the 45-item Outcomes Questionnaire (OQ-45), Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM), and the Outcome Rating Scale (ORS)
- *Health related quality of life*—Such as the Medical Outcomes Study Short Form questionnaire (SF-36) or EuroQol five item questionnaire (EQ-5D)

*See Kendrick et al[3] for references to individual scales.

Box 2 | Illustrative quotes from qualitative research on PROMs for depression in primary care

General practitioners

"The whole kind of detection and management of depression is something that primary care hasn't been enormously good at historically, and I think if we've got a, a tool which helps us, collectively, do it better, then then I think that's a good thing"[13]

"I don't have sufficient confidence that it's an objective enough tool, really, to measure trends"[13]

"Men in their 40s can be very hard to convince [that they are depressed]. They prefer to have an ulcer diagnosis"[14]

"With questionnaires, it feels like going back in development and starting at a more basic level where you give every detail the same importance although you in reality can drop most information rather quickly and concentrate on a few things in order to get a clue."[14]

Patients

"I didn't understand how you could ask somebody questions and think whether they were depressed or not. More recently I did it with the [measure]. They had a lot more questions and did it on the computer. It was a lot better and was more methodical"[13]

"I think it gives doctors a more accurate picture. As it is laid out for the doctor so there is no slip-up of things being left out."[13]

"It sort of quantifies that you have problems, but I feel that it is like you're trying to tie a number to the diagnosis, which isn't necessary. It isn't necessarily a yes or a no, and it's very difficult to put a description to it."[13]

Patient and provider preferences

Qualitative research from the UK reported that patients value the use of symptom questionnaires to assess their condition and the effectiveness of their treatment.[13] Using PROMs can present practical challenges, however. In time limited consultations practitioners must build rapport, ensure patients can tell their story, and discuss options with them. Some practitioners dislike these questionnaires as they intrude in consultations and undermine their autonomy.[13] Some doubt their validity, preferring to use their own judgment to assess severity and treatment response, and some use them with selected patients only. Box 2 provides some perspectives from GPs and patients.[13 14]

Is ongoing research likely to provide relevant evidence?

Three trials are currently under way in the UK, Europe, and Canada. Two of these are being exclusively run in primary care, and the third study in both primary and secondary care. They are all recruiting larger samples of patients, providing more training for practitioners, administering PROMs remotely, and providing automatic feedback of the results to practitioners.[15-17] These studies would provide better evidence on the use of PROMS for monitoring depression in primary care, and on facilitating its integration into routine practice for busy practitioners. The figure shows an infographic used in the ongoing PROMDEP trial of the PHQ-9.[17]

EDUCATION INTO PRACTICE

- Reflect on consultations with patients where you used questionnaires for depressive or anxiety symptoms: Why did you use them? To what extent do you think they changed the interaction? How did your patients feel about using them?
- How might you alter your approach in the future? How would you discuss using PROMS with your patient?

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

We asked a patient and public involvement (PPI) colleague, Bryan Palmer, who is providing advice on the PROMDEP study,[17] to comment on this article. He checked the text for its readability for a lay audience and emphasised that the patient infographic should refer to the score rather than the result of the PHQ-9 test, as it is only a score on a questionnaire that suggests a certain level of depression, rather than a definitive result in terms of a diagnosis. We are grateful for his input.

Score

Your score is.....which suggests that you may have **moderate depression**. This score is not enough by itself to indicate exactly whether you are moderatelydepressed. You should talk through your symptoms with your doctor to confirmwhether or not you are depressed, and about the various options available fortreatment if necessary.

Recommendation

Please talk to your doctor about the score within the next two weeks if possible.It's possible your doctor may suggest referring you to psychological therapyservices for talking treatment. Or your doctor may suggest prescribing an antidrepressant for you.

Distribution of depressive symptoms severity in the general population

Example of feedback on a PHQ-9 test score. The patient infographic is an adaptation of one developed for the DEPSCREEN-INFO trial[18] and is used in the PROMDEP trial[17] with permission of the DEPSCREEN-INFO chief investigator, Bernd Löwe.

What should we do in the light of the uncertainty?

Given the uncertainty of usefulness of PROMS in improving outcomes in patients with depression, their routine use in primary care is not established. The UK NICE depression guideline recommends that practitioners consider using routine monitoring with a validated outcome measure for all interventions, including drug treatment as well as psychological interventions.[19]

PROMS might provide particular benefits in certain patients[14]:

- Patients who do not readily report symptoms or articulate well how they have been progressing when asked an open question about how they are feeling
- Patients who need evidence of symptoms to justify specialist referral, or to obtain sickness benefit payments
- Patients unsure if they have depression, demonstrating the number of symptoms they have, and what treatment might be indicated.

Whether PROMs are used should be agreed with patients. Explain to your patient that completing symptom questionnaires such as PROMs can inform the initial assessment of their depression and help them to give feedback on how they are feeling after they have had treatment. This might help them feel more involved in their own care. Inform them that the value of PROMs in improving recovery from depression is uncertain, but research is under way that may provide clarity.

PROMs can free up time in consultations if they are completed beforehand by directing the practitioner's attention to which symptoms are most common. It is important that PROMs do not distort consultations: the focus should not be just the PROM results, but rather the patient as a whole.[19] Symptom questionnaires may not capture depression severity accurately. Recent research has shown that patients' PHQ-9 scores can often fail to match their global rating of how they feel (that is, better, worse, or just the same, in response to an open question).[20] PROM scores should therefore be interpreted with caution, alongside patients' statements of how they feel overall, coexisting anxiety symptoms, and quality of life.

RECOMMENDATIONS FOR FURTHER RESEARCH

Population—Primary care patients with depression, usually mixed with anxiety. In particular, studies should be conducted with:

- Adolescent patients (who have been neglected in primary care research so far)
- People treated with drugs, psychological therapies, or both
- Patients with multiple physical conditions (who have a high prevalence of depression and greater overall morbidity, mortality, and healthcare costs)

Intervention—Brief symptom measures, including both depressive and anxiety symptoms, administered routinely (preferably remotely via the internet or telephone (especially during covid-19 related restrictions on face to face contacts), with automated processing of results and feedback to practitioners and patients).

Comparison—Administration of the PROMs without feedback of results to practitioners or patients.

Outcomes—Depressive and anxiety symptoms (including total symptoms, remission, and improvement), quality of life, social functioning, adverse effects (including drug side effects), satisfaction with care, use of services, and costs for cost effectiveness estimation. Studies should ideally follow up patients for longer than six months.

WHAT PATIENTS NEED TO KNOW

- Questionnaires on patients' symptoms can be used as part of the initial assessment of depression and, as patient reported outcome measures (PROMs), can help patients to give feedback on how they are feeling after they have had some treatment
- Some patients report that using symptom questionnaires helps them feel that they have been assessed more thoroughly, that they can follow their progress more easily, and that they feel more involved in their own care
- Whether PROMs can help to improve patients' recovery from depression is unknown, but more research is under way that may provide clarity

Competing interests: TK is a member of the guideline update committee for the NICE depression guideline, which recommends the use of valid outcome measures to monitor depression,[19] and is the lead applicant on the NIHR Health Technology Assessment Programme funded PROMDEP trial of using the PHQ-9 in depression in primary care.[17]

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Tick bite

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CPD READING 0.5 HOURS

LEARNING MODULE

See http://learning.bmj.com for linked learning module

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This is one in a series of occasional articles on common problems in primary care. *The BMJ* welcomes contributions from GPs

A 14 year old boy presents with a one week history of a rash behind his knee. He has recently been on a hiking holiday to the Scottish Highlands, where he had a tick bite. His mother is worried about Lyme disease.

Lyme disease (Lyme borreliosis) is caused by *Borrelia burgdorferi* bacteria transmitted through bites from infected ticks.[1] It is common in Europe and North America.[1-3] More than 1500 people receive a laboratory confirmed diagnosis of Lyme disease each year in the UK,[4] and 300 000 in the US.[5] A study in UK primary care estimated an incidence of 12.1 (95% confidence interval 11.1 to 13.2) per 100 000 individuals per year.[6]

An accurate diagnosis can facilitate early treatment and prevent complications affecting the central nervous system, joints, skin, and/or heart.[7] Further, general practitioners can allay patients' concerns about the disease and provide referral when necessary.

This article offers a guide to assessing and managing tick bites in primary care.

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Our patient co-author Eva Galiza had Lyme disease. She suggested that we discuss diagnostic uncertainty, investigations, and prevention in this article. She stressed the importance of clear safety netting advice and recommended reliable, evidence based resources for patients. We are grateful for her contribution to this article.

WHAT YOU NEED TO KNOW

- Most tick bites do not cause Lyme disease
- A "bull's eye" red rash of erythema migrans is diagnostic for Lyme disease
- An antibiotic course of doxycycline for three weeks is first line treatment in patients with erythema migrans rash to prevent disseminated disease

What you should cover

History

Take a detailed history of exposure to tick bite and symptoms.

Risk assessment

Ask about

- Recreational or occupational activities that risk exposure to ticks, such as outdoor sports, camping, hiking, forestry, and farming.
- Travel, particularly over the past month, to areas where Lyme disease is common. In the UK, Scotland has the highest incidence, followed by southwest and southern England.[6] Ticks are common in rural and forested regions with wooded or grassy areas and humid environments, but also in urban gardens and parks.[6]
- A history of tick bite. Some patients recall a tick bite, others do not. Ticks crawl and can bite anywhere on the body.
- An estimate of how long the tick was attached can help to understand transmission of any infection. Most people who recognise a tick bite remove the tick before it can transmit *Borrelia*.[7] The North American tick species takes about 36 hours to transmit infection and in some European species transmission occurs after 17 hours.[8]

Symptoms of Lyme disease

Around 70-80% of patients with Lyme disease report a classic red rash called erythema migrans.[7 9] Guidelines from the National Institute for Health and Care Excellence (NICE)[7] recommend considering Lyme disease as a possible diagnosis in patients presenting with several generalised or focal symptoms listed in the table, especially if there is history of tick exposure in high risk areas. Early infection may be asymptomatic in 1-7% of people.[10] Between 2% and 3% of patients present with late and more severe manifestations such as neuroborreliosis, usually if an earlier stage was missed.[11]

Examination

Conduct a thorough physical examination to look for tick bites. Bites are more common on the ankles, behind the knees, and in the groin in adults, and in the head and neck area in children. Check under the hair and behind the ears. Localised lymphadenopathy may occur in children and adults.

Erythema migrans

This rash is mostly seen at the site of the tick bite and is diagnostic of Lyme disease. It is usually painless, more than 5 cm in diameter with gradually increasing size, and has a central clearing that gives the appearance of a bull's eye (figs 1-3).[7] The appearance can vary, however.[9] The rash can appear any time from three days after the initial tick bite, but usually becomes visible after 1-4 weeks.[12] Patients may miss the rash if they are unaware of having had a tick bite, particularly if the bite was where they cannot see, such as at the back of the knee.

A tick bite can also cause a local inflammatory reaction that typically recedes within 48 hours. This is differentiated from erythema migrans by the presence of itching, pain, and warmth.[7]

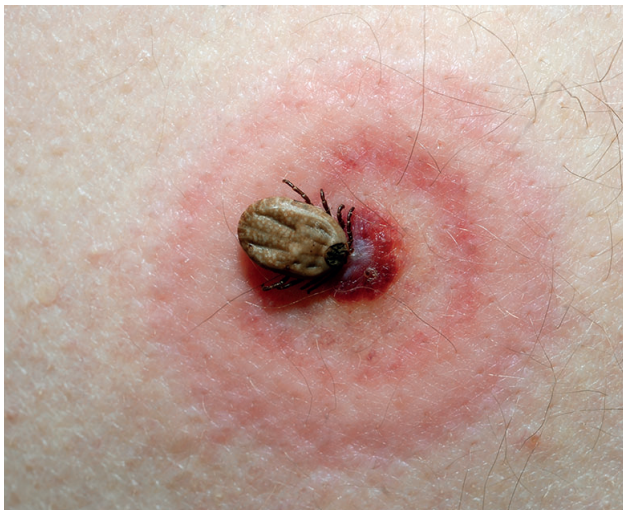

Fig 1 | An engorged tick on human skin with early erythema migrans rash

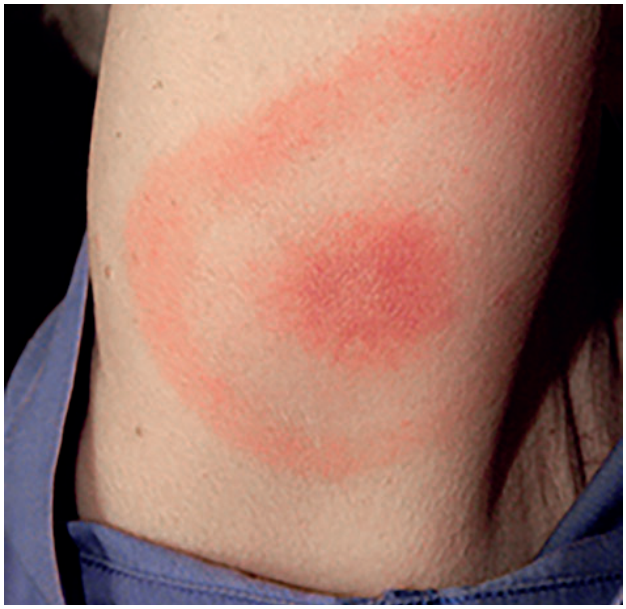

Fig 2 | Developed erythema migrans rash

Clinical signs and symptoms of Lyme disease[7-10]

Stages of disease	System	Signs and symptoms
Early localised disease (<30 days from exposure to tick bite)	Localised skin; systemic	Erythema migrans rash (70-80%) Headache Malaise Fluctuating and migratory joint or muscle aches and pain early on; arthritis may develop later Fever and sweats (rare)
Early disseminated disease (<3 months after exposure)	Skin; systemic; neurological; heart; eyes	Multiple erythema migrans rash Headache Malaise Fatigue Migratory joint or muscle aches and pain Swollen glands Fever and sweats Facial palsy (presents as or becomes bilateral in 23%—most common sign of Lyme neuroborreliosis in children). In adults: radicular pain with back or neck pain which is worse at night and is not adequately controlled by simple analgesia Unexplained cranial nerve palsies Meningitis (2%) Mononeuritis multiplex Motor or sensory radiculopathy Paraesthesia Heart block (rare) Pericarditis (1%) Keratitis (rare)
Late disseminated disease (>3 months after exposure)	Rashes; joints; neurological; eyes	Acrodermatitis chronica atrophicans (1-3%), a slowly progressive red or bluish lesion which may become atrophic Inflammatory arthritis affecting one or more joints, often involving the knee joint, may be fluctuating and migratory (arthritis is a presenting symptom in 28% of cases in the US, 3-7% in Europe)[10] Lyme arthritis is less painful compared with septic arthritis and is not accompanied by fever Encephalitis (rare) Neurocognitive presentations (cognitive impairment, such as memory problems and difficulty concentrating) Unexplained white matter changes on brain imaging Uveitis

Box 1 | Resources for patients

- Patient information leaflet from Public Health England: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718980/LymeDisease_SignsAndSymptoms_requested_changes_June_2018_final_Clean.pdf
- NHS information on Lyme disease: https://www.nhs.uk/Conditions/Lyme-disease
- Patient information leaflet on preventing tick bites and removing ticks from Public Health England: https://www.gov.uk/government/publications/tick-bite-risks-and-prevention-of-lyme-disease

Box 2 | Tips for patients on prevention of Lyme disease

- When going to areas where ticks are common, such as parks, gardens, forests, and wooded areas (even at urban sites), wear suitable clothing and shoes to cover exposed skin and apply insect/tick repellents
- Check your clothes and body regularly for ticks when outdoors and after you get home, and check the hair in young children
- Remove any ticks with a pair of fine tipped tweezers by grasping the tick very close to the skin. Once the tick is held, pull it upwards firmly but slowly. See Public Health England's website for advice on tick removal (box 1). Apply antiseptic gel to the affected area or wash thoroughly with antibacterial soap[14]

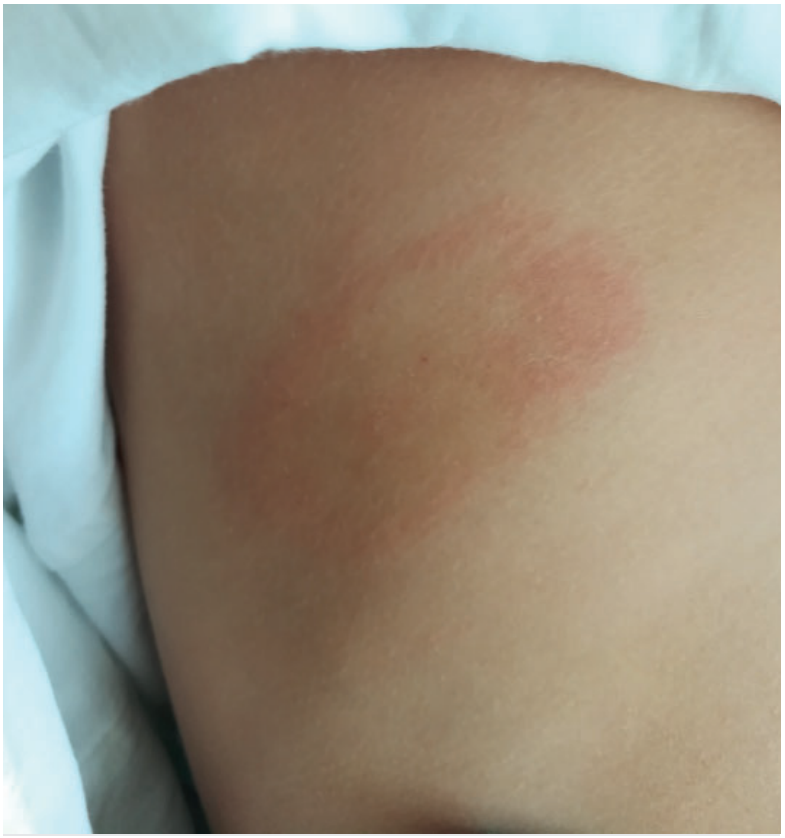

Fig 3 | Erythema migrans

What you should do

Ask patients about their understanding of Lyme disease and their concerns. Reassure them that most people have no symptoms except the rash and no complications. Boxes 1 and 2 list preventive measures and reliable sources of information that you can share with patients for prevention of Lyme borreliosis and other tickborne diseases such as babesiosis and tickborne encephalitis[13]

If the patient is symptomatic

Offer antibiotic treatment to patients with an erythema migrans rash to prevent disseminated disease, and to patients who are systemically unwell with a confirmed or high risk of tick exposure.[7 15] NICE guidelines recommend a course of doxycycline for 21 days as first line treatment.[7] Consult national or local treatment guidelines where you practise, as these may vary.

Investigations include serological tests for Lyme disease. Offer testing in patients with no erythema migrans rash but a high clinical suspicion of Lyme disease based on symptoms and a confirmed or risk of tick exposure.[7 9]

If the patient has a history of tick bite and no symptoms

NICE guidelines caution against making a diagnosis of Lyme disease in patients with no symptoms, even if they have a history of tick bite.[7] No treatment is required if the patient is well and has no rash.

EDUCATION INTO PRACTICE

- What features in a patient's history would prompt you to suspect Lyme disease?
- How would you discuss the management of tick bite with your patient?
- Think of a patient with a history of tick bite that you have seen in your practice. What were their concerns? Based on reading this article, what would you do differently during that appointment?

Explain that most tick bites are harmless and do not transmit Lyme disease.[7 9] Apart from in high risk areas, most ticks (≥85%) are not infected.[9] In Europe, including the UK, between 5% and 40% of ticks may be infected.[1] Only 2-3% of people with a tick bite develop Lyme disease.[9]

Ask the patient to make another appointment if they feel unwell, develop a rash, or get symptoms of fever, malaise, muscle and joint aches, headache, neck pain, or stiffness or facial weakness.

Referral

Offer referral to a specialist in infectious diseases for assessment and testing if the diagnosis is uncertain or the patient has persistent symptoms attributed to Lyme borreliosis following antimicrobial treatment.[7 9] Refer urgently to the relevant specialty if the patient presents with focal symptoms, such as neurological or cardiac complications, or uveitis.

Competing interests: None declared.

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PARTNERSHIP IN PRACTICE

Surgery during covid-19: co-producing patient resources

Mary L Venn, Carrie Tierney Weir, on behalf of CovidSurg

Surgical patients are facing new territory. They hear that elective surgery carries an increased risk of getting covid-19. But they also hear that delaying surgery may cause problems, and that operations can be done safely when precautions are taken. In this article, originally published on BMJ Opinion, Mary Venn, surgical research fellow, and Carrie Tierney Weir, a patient with inflammatory bowel disease, describe how their collaborative group, CovidSurg, has worked with patients to rapidly produce information resources about the risks of surgery during the pandemic.

MARY VENN: CHANGING THE PACE IN PATIENT ENGAGEMENT

CovidSurg is an international collaboration of surgeons and anaesthetists capturing and sharing data to improve clinical care. The first data from our CovidSurg cohort study, from 235 hospitals in 24 countries, identified a 24% overall mortality rate in patients with perioperative SARS-CoV-2 infections.[1] Postoperative pulmonary complications in these patients were far more frequent than before the pandemic, occurring in 51%.

These findings highlighted the need to discuss covid related complications with patients as part of the surgical consent process. They also prompted us to immediately draw up draft information for patients due to undergo surgery. We quickly established a patient advisory group to appraise and develop information resources, and a web based platform for patients and carers. We included patients with benign or malignant conditions and a few who had experience of hospital care during the pandemic.

Our opening submission to the group was a shiny eight page patient information booklet that felt "almost finished." We expected a stamp of approval on our smart graphics and catchy titles. Constructive criticism included: "Don't use 'era'," "what do you mean by recovery period?," and "the calendar icon has an 8 on it, does that mean eight days?" It took some humility to watch the booklet taken apart and rebuilt to include additional information, with more clarity.

CARRIE TIERNEY WEIR: KNOWLEDGE AND EXPERIENCE TO SHARE

When my surgeon told me I needed major bowel surgery for complications of inflammatory bowel disease, I had difficulty concentrating and barely retained any of the information provided during the consultation. Verbal discussion at a consultation should be supported by detailed information that patients can read and digest in the familiarity of their home.

Our patient advisory group included a mix of patients and carers, led by a surgical representative from CovidSurg. We met by video conference and exchanged views about the information we needed to make a decision about undergoing surgery. It soon became clear we had common views as well as substantial knowledge and experience to share. The booklet is intended to be used in conjunction with other communication methods, and not to replace conversations with surgeons.

Together the team identified key questions:

- Why are operations being cancelled?
- How are patients being prioritised for surgery?
- What are hospitals doing to keep patients safe?
- What can patients do to stay safe and best prepare for an operation?
- What will happen if I need emergency surgical care?

Collaborating to produce new resources

Patients wanted the risks of perioperative covid-19 quantified clearly in numbers. They also wanted detailed information about the measures hospitals are taking to keep them safe. Their questions extended beyond the information that we surgeons had anticipated, and included questions about whether visitors would be allowed, how patients might communicate with friends and family, and whether they might be discharged home sooner than usual.

Working together led to a higher quality and truly co-produced new patient information booklet to answer patient questions and provide the latest evidence about patient outcomes with perioperative SARS-CoV-2 infection. Our booklet is designed for any patient undergoing any type of surgery during the pandemic. We produced versions for people with learning disabilities and for those with dyslexia, and our research dissemination team translated the booklet into 16 languages.

In addition we have co-produced lay summaries of all CovidSurg research, which are available on our website bit.ly/researchexplained. The patient information booklet is available at bit.ly/surgeryduringcovid.

Advantages and challenges of virtual exchange

During the covid-19 pandemic, we clinicians have learnt to host webinars and publish research material online. Members of the patient advisory group valued being able to communicate digitally and work safely from their own homes. They described feeling valued and uninhibited by the less formal setting, and more able to contribute using screen shares.

As digital working increases, it will be necessary to assist potential group members to set up teleconferencing software, understand online data sharing, consent to participate, and offer the option to do so without being "on camera."

Next steps

Our next project; GlobalSurg-CovidSurg Week, is an international prospective cohort study to determine the optimal timing of surgery following SARS-CoV-2 infection and assess key global surgical outcomes such as mortality. We engaged the patient advisory group at the study design stage, so this study will answer questions important to patients as well as healthcare providers. To date, 1850 hospitals in 132 countries have expressed an interest in participating and registration is still open (globalsurg.org/surgweek/).

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Competing interests: None declared.

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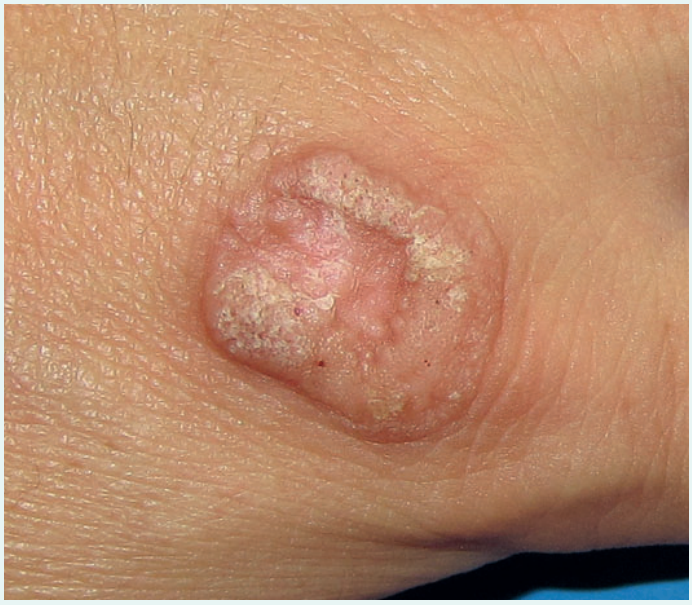
Find the full version with references at http://dx.doi.org/10.1136/bmj.m3466

SPOT DIAGNOSIS

An annular plaque on the hand

A 41 year old man presented with a five month history of a painless, non-pruritic rash on his left hand (fig 1). Six months earlier he had received cryotherapy with liquid nitrogen—applied using a cotton wool bud—for a common wart in the same location. The day after cryotherapy, a painful, haemorrhagic blister occurred at the treatment site. The blister was drained, and over the next 20 days it dried and healed. Two weeks later a new lesion developed on the rim of the previous blister and gradually increased. Examination showed an annular, verrucous plaque (an elevated palpable lesion >1 cm in diameter, with a jagged surface comprising multiple projections) of 1.8×1.5 cm in diameter on the dorsum of the left hand, in the centre of which were atrophic scars and normal skin.

What is the diagnosis?



Submitted by Fei Han and Bo Guo

Patient consent obtained.

Cite this as: *BMJ* 2020;370:m2209

MINERVA WELCOMES SUBMISSIONS

Minerva pictures are cases which offer an educational message, and are of interest to a general medical audience (see p 123). Please submit as "Minerva" via our online editorial office (see bmj.com) and follow our advice on submitting images. Please provide two or three sentences (no more than 100 words) explaining the picture, and send us the signed consent to publication from the patient. We require written consent from every patient, parent, or next of kin, regardless of whether the patient can be identified or not from the picture.

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answers

SPOT DIAGNOSIS

An annular plaque on the hand

What is the diagnosis?

The black and red dots on the surface of the verrucous plaque indicate a common cutaneous wart, and the morphology of the lesion suggests a doughnut wart—also known as a ring wart.

- Cutaneous warts are a common skin condition caused by human papillomavirus (HPV). These warts can be divided into several subtypes, including common, plantar, flat, and genital.
- Common warts are hyperkeratotic papules or plaques that are commonly caused by HPV strains 1, 2, 4, 27, or 57; often on the hands. Doughnut warts are a complication after wart treatment with cantharidin or cryotherapy, and are a form of recurrent warts, with central clearing and peripheral recurrence forming a doughnut shape. The pathogenesis is unknown but seems to represent an intraepidermal autoinoculation of the wart virus through the blister cavity.
- The diagnosis of cutaneous warts is usually clinical. Differential diagnoses include seborrhoeic keratoses, actinic keratoses, lichen planus, corns, callus, tuberculosis verrucosa cutis, Bowen's disease, basal cell carcinomas, squamous cell carcinoma, and melanocytic lesions.
- Most cutaneous warts resolve spontaneously within two years. Treatment is preferred for symptoms, cosmetic reasons, or persistent warts. The most common treatments are topical salicylic acid and cryotherapy.

PATIENT OUTCOME

The patient was treated with topical 5% 5-fluorouracil ointment. The lesions resolved two months after the presentation and had not recurred during a year of follow-up.

LEARNING POINT

Treatments for cutaneous warts can result in central clearing of the warts with peripheral recurrence, which has a doughnut appearance.

CPD READING
0.5 HOURS

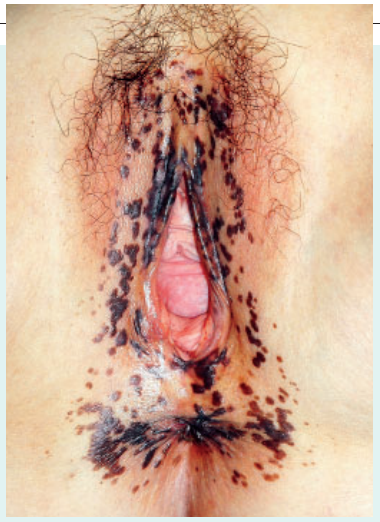
You can record CPD points for reading any article. We suggest half an hour to read and reflect on each.

LEARNING MODULE

Articles with a "learning module" logo have a linked BMJ Learning module at http://learning.bmj.com.

MINERVA

Multiple pigmented papules on the vulva



This picture shows bowenoid papulosis caused by infection with human papillomavirus.

The patient was an otherwise healthy 33 year old woman with multiple asymptomatic hyperpigmented flat papules on the labia majora, labia minora, posterior commissure of the labia majora, and perianal area, which had slowly increased in both size and number over six months.

Differential diagnoses include genital warts, lichen planus, pigmented condylomata acuminate, and seborrhoeic keratosis.

A diagnosis of bowenoid papulosis was made on the basis of the clinical and histopathological findings.

The patient was a non-smoker. She had not been vaccinated against human papillomavirus, which is a key risk factor.

It is important to differentiate this condition from vulval intraepithelial neoplasia to avoid overtreatment because bowenoid papulosis can regress spontaneously or with conservative management.

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Patient consent obtained.

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If you would like to write a Minerva picture case, please see our author guidelines at http://bit.ly/29HCBAL and submit online at http://bit.ly/29yyGSx

Paternal exposure to anti-epileptic drugs

Maternal exposure to anti-epileptic drugs during pregnancy carries a risk of adverse neurodevelopmental outcomes and congenital malformations in the offspring. Until now, no one has thought to ask the same question about paternal exposure. Fortunately, the news is good. A registry study from Sweden finds that the offspring of fathers who had been dispensed an anti-epileptic drug around the time of conception were no more likely to show congenital malformations, intellectual disability, autism spectrum disorder, or attention deficit/hyperactivity disorder than a control group (*J Neurol Neurosurg Psych* doi:10.1136/jnnp-2020-323028).

Ultra-processed foods and obesity

Although denounced by nutritionists, highly processed foods are popular because they are inexpensive, convenient, and palatable. Such foods already represent more than half the total daily energy intake in several high income countries. A large longitudinal study from France finds positive associations between intake of ultra-processed foods and risks of overweight and obesity (*PLoS Med* doi:10.1371/journal.pmed.1003256). Over a decade of observation, people who ate the most ultra-processed food were most likely to show an increase in body mass index.

Endocarditis with bioprosthetic and mechanical heart valves

The efficacy and durability of mechanical heart valves is well established. Their main disadvantage is thrombogenicity, which requires lifelong anticoagulation. Bioprosthetic valves, on the other hand, don't require anticoagulation, but show less longevity. They also carry a greater risk of infective endocarditis according to a systematic review which included data from 40 000 patients. People with bioprosthetic valves were roughly 50% more likely to experience endocarditis than people with mechanical valves.

Idiopathic neuropathy

Cryptogenic sensory polyneuropathy is often both painful and resistant to treatment. Several drugs have been tried, including tricyclic antidepressants, anti-epileptic drugs, and sodium channel blockers. In the absence of head-to-head trials it's hard to know which to prefer. Among 400 patients who took part in an open label trial with response adaptive randomisation, there was no clear winner (*JAMA Neurol* doi:10.1001/jamaneurol.2020.2590). However, judged against a combined endpoint of pain reduction and absence of adverse effects, nortriptyline and duloxetine were better than pregabalin or mexiletine.

Functional cognitive disorders

Symptoms of impaired cognition are common and it's increasingly recognised that they don't always indicate an underlying dementing illness. Many cases are not progressive and have a functional cause. The clue to distinguishing the disorders is inconsistency. Patients who can perform a cognitive task well, but who show impaired ability at other times, particularly when the task is the focus of attention, are likely to have a functional explanation for their difficulties (Brain doi:10.1093/brain/awaa224).

Trial design

Response adaptive randomisation, where allocation of treatment is influenced by information from previous participants, is gaining popularity in clinical trials. The approach is intended to minimise the number of people given treatments that turn out to be inferior, but a statistician warns that, in practice, response adaptive randomisation is likely to introduce bias and vitiate the benefits provided by randomisation (*Clin Infect Dis* doi:10.1093/cid/ciaa334).

Cite this as: *BMJ* 2020;370:m3514