CAS-039

Laysan Fever: A Case Series of a Rare and Emerging Disease

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BACKGROUND:

Laysan Fever (LF), first described in the 1990's, is a rare disease that has received limited scientific study. Caused by an unknown virus suspected to be transmitted through the bite of the seabird tick *Omithodoros capensis*, LF occurs in humans who enter seabird colonies in the remote Northwestern Hawaiian Islands (NWHI), 1300km west of Oahu. This abstract describes suspected LF cases in 3 out of 4 healthy seasonal ecological workers on one atoll in NWHI in spring/summer 2023. Symptoms/timeline were compared with the published case definition: to receive an LF diagnosis a patient must have at least 3 of 7 primary symptoms (feverishness, fatigue, headache, nausea, anorexia, myalgia/arthralgia) while residing in NWHI, or within 14 days of departure, without other etiology of illness.

OBJECTIVE:

To describe 3 cases of suspected Laysan Fever in seasonal workers in the NWHI.

METHODS:

Data on symptoms and illness timeline were obtained from three individuals living on one of the NWHI atolls during the spring and summer of 2023. All were previously healthy and were isolated from other human contact for 3 months. Symptoms and timeline were compared with previously described cases of Laysan Fever.

RESULTS:

Case1. 24-year-old female noted 6-9 tick bites 3 days before symptom onset. Symptoms included headache, otalgia, fatigue, nausea, abdominal cramping, and chills, resolving day 13.
Case2. 29-year-old female noted 7 tick bites 4-5 days before symptom onset. Developed fatigue, myalgias, headache, lightheadedness, nausea, and cervical lymphadenopathy, resolving day 10.
Case3. 25-year-old female exposed to seabird ticks with no noted bites. Initially had fatigue, followed by abdominal cramps, nausea/vomiting, headache, and anorexia, resolving day 9. (See Table.)

Table: Symptom complex by day of illness

	Case 1	Case 2	Case 3
Day 1	Headache, bilateral otalgia, fatigue	Fatigue, exacerbated by activity/sun exposure	Lethargy, fatigue, abdominal cramps, nausea, vomiting
Day 2	Headache, bilateral otalgia, fatigue	Fatigue, exacerbated by activity/sun exposure	Lethargy, fatigue, abdominal cramps, headache
Day 3	Headache, bilateral otalgia, fatigue	Fatigue, exacerbated by activity/sun exposure	Lethargy, fatigue, abdominal cramps; severe headache; anorexia
Day 4	Headache, bilateral otalgia, fatigue	Fatigue, exacerbated by activity/sun exposure; myalgias	Lethargy, fatigue, abdominal cramps, severe headache, anorexia
Day 5	Nausea, upper abdominal cramping	Fatigue, exacerbated by activity/sun exposure; myalgias; nausea; severe headache, lightheadedness; cervical lymphadenopathy	Lethargy, fatigue, abdominal cramps, severe headache, anorexia. Improving, but worse with sun exposure.
Day 6	Nausea, upper abdominal cramping	Fatigue, exacerbated by activity/sun exposure; myalgias; nausea; severe headache, lightheadedness; cervical lymphadenopathy	Headache and abdominal pain improved. Appetite returned.
Day 7	Nausea, upper abdominal cramping	Fatigue, exacerbated by activity/sun exposure; abdominal cramping; nausea	Fatigue
Day 8	Nausea, upper abdominal cramping	Fatigue, exacerbated by activity/sun exposure; abdominal cramping; nausea	Fatigue
Day 9	Nausea, upper abdominal cramping	Symptom improvement	All symptoms resolved
Day 10	Nausea, upper abdominal cramping	All symptoms resolved	
Day 11	Lower abdominal cramping, non-bloody diarrhea		
Day 12	Abdominal pain, fatigue, chills		
Day 13	All symptoms resolved		

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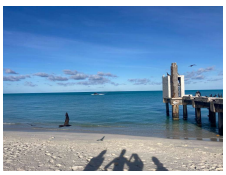
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CONCLUSIONS:

While typically self-limited, Laysan Fever causes significant illness and can interfere with activities of daily living. LF cases in NWHI are likely underreported, as healthcare access and disease surveillance is limited. Further research is necessary to determine the etiologic agent of LF, transmission mode/frequency, and possible diagnostic testing, treatment, and prevention.