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RESEARCH ARTICLE

GENITOURINARY MYIASIS CAUSED BY MUSCA DOMESTICA: REGARDING A SINGULAR

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Abstract

A 27-year-old woman from and resident in ourika(Marrakesh region – Morocco) with a history of anemia under iron treatment, without a history of surgery, has G1 P1. Presented to the Mohamed VI University Hospital on day 21 post partum of a vaginal birth at home, the evolution was marked by the appearance of urinary incontinence treated in the emergency room by placing a catheter urinary on day 6 post partum then send to her home for the COVID 19 context, then the patient consulted again at the gyneco-obstetric emergency room for deterioration of the general condition in a picture of hemodynamic shock. On physical examination, the patient was hemodynamically unstable with blood pressure figures of 70/40 mmhg, heart rate at 50 bpm, temperature at 35 ° and mucosal skin pallor.Examination of the vaginal cavity showed the presence of numerous whitish-looking maggots, a sample was taken by the biology team that collected the maggots for the purpose of a parasitological study to identify the parasite responsible.

Introduction:-

Myiasis, from the Greek myia: fly, is defined as any parasitic disease of tissues or organs caused in humans and animals by larvae of diptera (or maggot) [1].

The larvae feed, at least for a period of their life, on living or dead tissue of the host, body fluids, or food ingested by the individual. [2]

The people exposed are especially those who live in precarious sanitary conditions, presenting wounds or open infections. Female flies are attracted to poorly cleaned and unprotected wounds and clothing stained with urine or feces, and the larvae of these flies crawl inside these lesions or to a natural opening.

It is a common ailment of cattle. Man is an accidental host in which the locations frequently observed are otorhinolaryngology and cutaneous. The vaginal location is exceptional [1].

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In this work, we report a vaginal *Musca domestica* myiasis occurring in intensive care unit, the diagnosis of which was confirmed by entomological investigation in the parasitology and mycology department.

Medical Observation
This is a 27-year-old patient from and residing in the Ourika region, with no significant pathological DCDS.

Admitted to the Mohammed VI hospital on the day 21 post partum following a home delivery, the evolution was marked by the appearance of urinary incontinence treated in the emergency room by placing a urinary catheter on day 6 of the post partum then send to her home for the COVID 19 context, then went back to the obstetric and gynecological emergency department for an alteration of the general condition in a picture of hemodynamic shock.

Supported by the gyneco-obstetric intensive care unit in front of his hemodynamic instability, which was marked by cardio-respiratory arrest. The patient recovered after 3 cycles of cardiac massage / ventilation. She was subsequently intubated and ventilated due to the persistence of neurological and hemodynamic distress.

On clinical examination, the patient presented blood pressure at 70 / 40mmhg, a heart rate at 50 bpm, a temperature at 35 ° C, and mucocutaneous pallor.

Examination of the vaginal cavity showed the presence of numerous whitish-looking maggots.

Faced with this clinical picture, an abdominal ultrasound was performed and revealed a thickened and flaky appearance of the vesicular wall, associated with multiple vesicular edema and low abundance of effusion (figure 1).

Faced with these clinico-radiological elements, the patient underwent a surgical exploration, revealing a vesico-vaginal fistula of 1.5 cm, treated intraoperatively, then put on broad-spectrum antibiotic therapy, the patient presented a febrile peak of where the indication of a generalized infectious assessment.

The biological assessment shows
White globules predominantly 15470: neutrophil, eosinophil level at 2200 elements / ul, Hemoglobin: 13.1 g / dl, Platelets: 197,000 / mm3, Prothrombin rate: 70%, Na +: 141mmol / l, K + 4.2 mmol / l, Urea: 0.39 g / lCreatinine: 7.5 mg / l, and high liver functionASAT: 76U / l and ALAT: 113 U / l. The CRP was at 19.68mg / l. Blood culture for sepsis was sterile after 2 weeks of incubation. Study of the effusion fluid and cytobacteriological examination of urine was sterile after 48 hours.

The course was marked by hemodynamic and respiratory stability, before her condition began to deteriorate, in particular by the drop in blood pressure figures, and the worsening of the biological assessment.

During the nursing of the patient; we note the presence of whitish maggots, measuring 1 cm long.

A sample was taken by the biology team, who recovered the maggots and thus carried out various parasitological samples in order to identify the parasite (Figures 2 and 3).

The parasitological study made it possible to highlight a cavitary Musca domestica type fly larva, observed under a microscope at low magnification, measuring about 1cm long in which we describe a head, a body containing channels, and an end perforated by breathing holes (figure 4).

The patient benefited from manual extraction of the larvae, facilitated by the obstruction of the orifice by a fatty substance, a thick layer of petroleum jelly covered with compresses to be left for 24 hours.The patient improved hemodynamically and respiratory after 2 days.

Discussions:-

Pathogen cycle
Musca domestica = house fly (Linnaeus, 1758): It is a cosmopolitan fly, greyish with black stripes on the thorax and two yellow spots on the abdomen, it measures 6 to 8 millimeters.

- Cycle: The female lays masses of 75 to 150 eggs on manure, human excreta, decaying animal or plant matter. Under the right conditions of heat and humidity, hatching occurs within 24 hours. The larvae or maggots, without an apparent head, tapering, whitish or yellowish, develop in the environment where the egg was laid. In 5 days, during which they undergo two moults, they reach their maximum size. They then migrate to drier places, where they transform into nymphs or pupae, motionless, brown, and barrel-shaped. After four days, the adult insect emerges. The cycle from egg to adult is about 10 days. The fly collects pathogenic germs from the legs, proboscis and body, either when laying eggs on decaying material or when feeding on body fluids. It then carries these germs onto the food it can also eat. It can thus spread many intestinal diseases including cholera, typhoid fever, Salmonella diarrhoea and possibly polio. It causes myiasis of wounds, folds or even rectal or bladder [1].

Pathogenic Role Of Musca Domestica Flies

Although not vectors of disease, in the true sense of the term, a number of flies can carry a large number of pathogens [3]. Indeed, these flies are not hematophagous, but passively transport germs on their legs. Flies, which enter homes in large numbers, represent a significant risk to public health, through the spread of faecal peril diseases [4]. Among the Muscidae family, the cosmopolitan house flies, Musca domestica and Musca stabulans [5], are particularly abundant, and very prolific (about 130 eggs per clutch).

Egg laying begins when the female is 10 days old. The banana-shaped eggs, measuring 1 mm, are equipped with a pair of longitudinal ridges that help them float in liquid media. Maggots, flattened, legless, gray-brown, hatch after 24 to 48 hours. The hairy protuberances on their dorsal surface are believed to help them move forward and float in semi-liquid media.

Newly hatched larvae often move haphazardly before digging a hole in a suitable food for them. Larval development requires a minimum period of 8 days, during which the maggot passes through 3 stages, eventually reaching a length of 6 mm. Pupation requires a drier place, and lasts at least 10 days. Development from egg to adult takes 3 weeks, although colder conditions lengthen this period.

Most urogenital myiasis are pseudo-myiasis: the larvae are observed in the droppings or urine without it being possible to say that they have actually been evacuated with them. Almost always, individual hygienic conditions are the cause. The vagina can be invaded by occasional myiasis, which predisposing factors: suppurative lesions which attract females who will deposit either larvae or eggs, acquired immunodeficiency, a comatose state, defective personal hygiene, the habits of some populations to sit on the floor, certain climatic conditions, whichfavour the survival of flies and co-existing genital infections [6,7,8,9].

Diagnosis of Miyases

Clinical Diagnosis

The diagnosis of "myiasis" in the broad sense is obvious if one or more maggots are visible at the bottom of a sluice, or are brought by the patient. In the latter case, however, further questioning is necessary to avoid falling into the trap of Ekbom syndrome. The diagnosis is made by visualizing the maggots. These will be taken with the forceps or after excision for furunculous myiasis or even by their expulsion during a sneezing or blowing for nasal and sinus myiasis or in the stool for digestive or rectal myiasis. These can sometimes be seen during rectoscopy or low colonoscopy and removed during examination.

Entomological Diagnosis

The maggots collected should be fixed with 70 ° ethyl alcohol. The identification of the species in question requires, except in special cases, the help of a trained entomologist. This is performed on the stage III larva. The size, shape, color, ornamentation participate in this identification[11].But it is mainly by observing the posterior end where the respiratory stigmata (or spiracles) are located, the morphology of which varies according to the genera and species that this will be done with certainty. A spiracle consists of a peritreme and a circular structure or "button" sclerotized surrounding the respiratory slits (one in stage I, two in stage II and three in stage III, this is the most characteristic stage). It is also based on the shape of the oral scleritis (hooks) located at the anterior end. Identification therefore requires, after dissection and dehydration, mounting the ends of the larvae between slide and coverslip, in Canada Balsam. (10)

Principles of Processing

The treatment is based on the extraction of the larva (s), which is manual or even surgical. The spontaneous exit of the larva can be facilitated by the obstruction of the opening by a fatty substance (thick layer of petroleum jelly covered with compresses to be left for 24 hours). In certain locations (cavities), local anesthetics can be used to immobilize the larvae.

It is systematically associated with an antisepsis of the wound, as well as, if necessary (general signs), a general antibiotic therapy in the event of superinfection and, in the event of myiasis of the wounds or ducts, a surgical debridement of the structures affected.

Ivermectin is effective in the treatment and prevention of certain animal myiasis.

Prevention

Prevention is based on improving hygiene, systematic ironing of underwear (the heat destroys the larvae), systematic cleaning and protection of wounds. Biological control through the release of sterile males is very complex.

Several methods exist which can be classified into three broad categories according to the object of their action: the prevention of reproduction, the prevention of attacks on animals and the destruction of insects in the environments where they are found.

Control of fly Reproduction

Scrupulous hygiene in and around the breeding facilities considerably reduces their possibility of reproduction. Composting of these organic materials is recommended as the temperature at which fermentation takes place destroys a good number of fly larvae.

Prevention of Attacks

There are many Ways

1. Bathing and spraying: insecticides can be applied to the coats and skin of animals, either by insecticidal baths or by various means of spraying.
2. Mosquito nets: if necessary, animals can be kept inside buildings whose openings will be protected by mosquito nets which can be impregnated with insecticides.

Conclusion:-

This Musca domestica myiasis is responsible for hemodynamic instability, causes anaphylactic shock, once the diagnosis has been made; therapeutic management and cavity drainage allows clinical-biological improvement marked by the normalization of the biological parameters, and the disappearance of maggots.

Figure 1:- Abdominal ultrasound showing the intracavitary effusion.

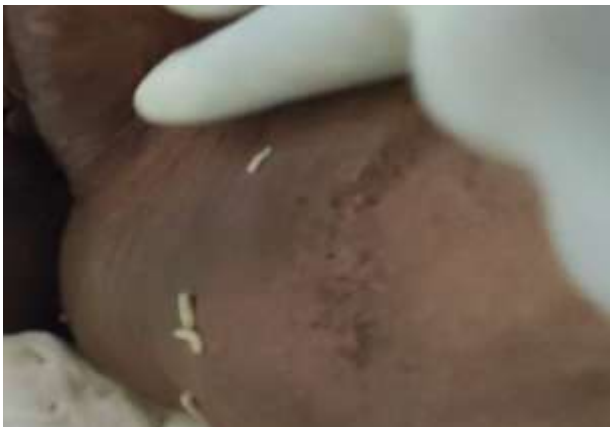

Figure 2:- Maggots next to the perineum.

Figure 3:- Patient in lateral decubitus, showing prominent maggots in the domestica vaginal opening.

Figure 4:- Maggot from Musca.

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