

Case Report

Black Widow Spider Bite

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THE SYNDROME resulting from the bite of the black widow spider is one encountered more frequently in medical textbooks than in actual clinical practice. Inasmuch as few physicians, particularly those living in large urban areas, have had the opportunity to see such cases, I feel that experiences in handling three cases within a two month period of time are worth reporting in detail.

A review of the literature on this subject is not given, for what little is known about this disease is well presented in standard medical texts. The theoretical, biochemical and pathologic aspects of the disease will be left to others, and the description of the condition as it occurred in three people in this rural community will be presented and discussed.

INCIDENCE IN PERRY COUNTY

To my knowledge, there were few cases of black widow spider bite until this year. In 1953, there was one case in the county, which has a population of 15,000. This summer (1954) there have been a total of five cases (two of them treated by other physicians). All six patients survived. Five of the six patients incurred the bite on the genitalia or buttocks while using an outdoor toilet.

REPORT OF CASES

Case 1. A 28 year old construction worker was rushed to the office by his partner from their place of work with the complaint of severe abdominal pain. The patient was barely able to stagger, moaning and groaning and twisting about, into the examination room.

He complained of great pain in his abdomen and back, particularly the latter. He pointed to the upper lumbar area as the site of the pain and seemed unable to tell whether the pain in his back was radiating to the abdomen or vice versa.

With considerable difficulty, he was persuaded to lie on the table and be examined. Even then, he rolled from side to side, uttering many sounds of agony and, at first, insisted that he could not lie still.

With much difficulty, he was examined, nevertheless. The entire abdomen was rigid. There was no question of localized tenderness or rebound tenderness inasmuch as the abdominal wall could not be depressed at any point. Liver dullness on percussion was preserved and the bowel sounds were normal.

The blood pressure was 120/80, the pulse 70, the temperature 98.6 F., and the respiration normal. While the patient was being examined for a possible hernia, he mentioned that he had been bitten on the glans

penis "by something" about five hours earlier while sitting in a privy. The glans penis was examined and an area of erythema 3 mm. in diameter was seen. There was no induration, edema or local tenderness.

The patient, upon questioning, then stated that the pain in his back and abdomen began about thirty minutes after the insect bite and had gradually increased in severity until it became intolerable while he was driving his truck four hours later.

It occurred to me that this was probably a black widow spider bite and, as a therapeutic test, I injected 10 cc. of 10 per cent calcium gluconate intravenously. Just as the injection was completed, the patient exclaimed that the pain was gone. He smiled happily, arose immediately and stated he wished to go home.

He was persuaded to enter the hospital, however, where he was given Demerol and oral calcium gluconate when the pain recurred. Within forty-eight hours he was symptom free.

It was noted that even though the pain immediately subsided after the calcium, the rigidity of the abdominal muscles was undiminished until many hours later.

Case 2. A 7 year old boy was brought to the hospital emergency room at 4:00 a.m. with the complaint of abdominal pain radiating to his legs.

The boy, who was already stoic at the age of 7, said only that his "stomach hurt" and did not complain any more. He was not in any great distress and allowed himself to be examined without objection.

His temperature, pulse, breath sounds, respirations and heart rate were normal. The abdomen was rigid and could not be depressed. The bowel sounds were normal, liver dullness preserved and there were no other findings.

The parents were told that the boy had apparently been bitten by a spider, but no history of a spider bite could be elicited at this time.

The boy had awakened from sleep at 1:00 a.m. because of severe abdominal pain which gradually became worse. There was no vomiting. By the time he reached the hospital, however, the symptoms were already subsiding. It was not until the next day that the patient remembered that he had been bitten on the right buttock by "something" about one or two hours before the pain began. He had been sitting on an outdoor toilet at the time. Examination failed to reveal the site of the bite.

Treatment consisted only of oral calcium gluconate. Within 24 hours the patient was asymptomatic.

Case 3. At 4:00 a.m. one morning an excited mother telephoned from her farm home twenty miles away to say that her 17 year old daughter was having pain in her neck which spread down her back into her legs. The mother was persuaded to bring the girl to the hospital where, one hour later, she was examined.

The girl was writhing about on the examining table

and was crying out frequently, loudly exclaiming that the pain in her back and legs was too great to tolerate. She also said she could "hardly breathe."

The patient had been awakened by a sharp stinging sensation on the right side of her neck at 2:30 a.m. She thought it was a wasp sting. She arose and massaged the area with liniment. Within thirty minutes, however, the pain had spread down the neck and had become more severe. The pain then spread down the right arm, down the back and over the right side of the chest. It then progressed over the left side of the chest, over the abdomen and down the back to the thighs.

Examination showed a 17 year old girl writhing about. The pulse was 85, the respirations 28 and the temperature 99 F. The breath sounds were clear but somewhat shortened in duration. The abdominal and back muscles were rigid.

It was evident that the patient was suffering from the effects of a black widow spider bite and she was thereupon given 10 cc. of 10 per cent calcium gluconate intravenously. The pain in the muscles immediately disappeared, but the rigidity and dyspnea remained.

She was treated with oxygen, Demerol and oral calcium gluconate. Vomiting was intractable for the first twenty-four hours and intravenous fluids were required. She was well enough to leave the hospital in four days.

Further information from the father indicated that an old porch had been torn down the day before the patient was bitten and that it had rained that night, apparently driving spiders into the girl's bedroom which adjoined. The father the next day killed three spiders which filled the description of the black widow; i.e., about one inch spread with red hour-glass figures on the under-surface of the thorax.

COMMENT

The symptomatology of these cases indicates that the discomfort suffered by patients with black widow spider bites is largely due to generalized muscle rigidity and pain. The dyspnea that occurred in the third case was secondary to intercostal muscle rigidity and although no cyanosis or tachycardia was present, dyspnea, relieved by oxygen, was definitely present.

A point to remember is that in none of these patients was the history of spider bite available at the time when the patient needed treatment the most. In the first case, the history of an insect bite was a casual one; in the next, the history was obtained only after persistent questioning, and then it was after the patient was well. In the third case, the history of a bite was available from the beginning, but the type of insect was not known.

In other words, in most cases, apparently, the diagnosis of black widow spider bite will have to be made on clinical grounds and the physician will have to be thoroughly aware of the disease in order to make the diagnosis.

Once a patient has been seen with this disease, it is not difficult to make the diagnosis again because the clinical picture is fairly uniform. The

patient appears to be in agony, unless, as in case two, the climax has passed, and the abdomen is in a state of boardlike rigidity.

The differential diagnosis of black widow spider bite is usually simple. A ruptured peptic ulcer is the principle disease to differentiate. The presence of normal bowel sounds, the presence of normal liver dullness on percussion, and the history serve to differentiate the two conditions.

The best test for black widow spider bite apparently is the intravenous injection of calcium gluconate. In no other disease, perhaps, is such instantaneous relief granted from such agonizing misery as here. One could almost say that this test is specific for this disease.

The treatment, at the time these patients were seen, was purely symptomatic. Intravenous calcium gluconate was given for immediate relief. Oxygen was given for dyspnea. Intravenous fluids were given because of persistent vomiting in one case; the vomiting may well have been due to the Demerol instead of the spider bite, however. Opiates are given for pain as it recurs. Oral calcium gluconate was given in these cases on empirical grounds, there being no mention of this therapy in the literature on the subject. One can only say that there seemed to be some benefit; it would seem logical to utilize this form of calcium also, inasmuch as intravenous calcium works so well.

Therapy which has become available since these patients were treated includes an antivenom produced in a horse serum which has recently been placed on the market. I have had no experience with this preparation, but it would be a welcome adjunct to the therapy of these cases. Antivenom should be good prophylaxis for a known spider bite if given during the first few hours. Black widow spider antivenom could be used routinely for spider bites, even though the type of spider is unknown, just as tetanus antitoxin is used for certain types of injuries.

SUMMARY

Three cases of black widow spider bite are described in detail.

The discomfort following such a bite is largely due to generalized muscle rigidity and pain.

The diagnosis must usually be made on clinical grounds rather than by history.

The clinical picture is fairly uniform and is characterized best by the intense abdominal rigidity and abdominal and back pain.

The differential diagnosis involves, primarily, a perforated peptic ulcer.

A good therapeutic test for black widow spider bite is intravenous calcium gluconate.

The treatment includes parenteral and oral calcium, opiates, fluids, oxygen and antivenom. This is believed to be the first reported use of oral calcium.