THE APPARENT INVOLVEMENT OF VIBRIO FETUS IN AN INFECTION OF MAN

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Many articles can be found in the literature concerning the infection of livestock by *Vibrio fetus*. References have been made to such infections in both the male and female animal. To the knowledge of this writer, however, only one report has been made concerning infections with this organism, or at least a very similar one, in the human race. Curtis (1913) reported the isolation of a curved, motile, anaerobic bacillus from uterine discharges of two female patients: one whose infection followed instrumental abortion, and the other whose labor at full term was complicated by the same organism. This rod Curtis assigned to the genus *Vibrio*. Apparently no reports have been made of a vibrionic infection in the male human involving this or any very similar organism.

Recently a male worker in this laboratory, in an attempt to obtain a pure culture of a *Staphylococcus* for addition to the stock culture collection, had occasion to open aseptically a small, simple pustule located on the cheek. From the pus and exudate obtained, nutrient agar and blood-enriched (10 per cent) nutrient agar plates were inoculated by the streak method. At the same time a film was made from this material, which was stained by Gram's method. This preparation showed “comma” or “S-shaped” gram-negative organisms, a few short gram-negative rods, and large, nonsporulating, gram-positive rods.

Culturally the large rod grew quite as well on plain nutrient agar as on the blood medium under aerobic conditions and at a temperature of 37 °C. Growth was visible in 24 hours. The small, curved, gram-negative rods, however, were reluctant to grow even upon the 10 per cent blood agar. Transfer to a fresh plate of blood agar under an atmosphere of 10 per cent CO₂, however, produced an increased amount of growth in 3 to 4 days. Colonies of the large rod were 5 to 15 mm in diameter, raised, concave, glistening, smooth, entire, and dirty-white in color. Colonies of the small, curved rod were 1 to 3 mm in diameter, raised, concave, glistening, smooth, entire, and blue to blue-gray in color. Growth of this second organism was also obtained upon inoculation of thioglycolate blood broth.² This growth was noted to occur at a depth of one-half inch. To one set of thioglycolate blood broth tubes, 3 per cent gelatin was

¹ The investigation reported in this paper is in connection with a project of the Wyoming Agricultural Experiment Station and is published by permission of the Director.

² This consisted of:

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Neopeptone</td>
<td>10 g</td>
</tr>
<tr>
<td>K₂HPO₄</td>
<td>2 g</td>
</tr>
<tr>
<td>Sodium thioglycolate</td>
<td>1 g</td>
</tr>
<tr>
<td>Agar</td>
<td>1 g</td>
</tr>
</tbody>
</table>

Water adjusted to pH 7.0

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added. The curved rods did not bring about liquefaction of the gelatin within 1 week. To three other sets of thioglycolate blood broth tubes, glucose, sucrose, or lactose in 1 per cent concentrations was added. According to tests with Benedict's quantitative reagents, these sugars had not been fermented in 1 week although ample growth of the curved rods was noted. Hanging drop examinations of each organism showed them to be motile.

As the cultures aged, the large gram-positive rod was noted to assume the gram-negative reaction to a certain extent. The short, curved rod exhibited a tendency to form short, straight, or "S-shaped" chains. At all ages this organism showed definite granulation with the ordinary stains.

The serological studies upon this isolated curved rod were brief but of interest. A saline suspension of 1 billion cells per cubic centimeter reacted with a serum diluted to 1:120. This serum had previously been drawn from a pregnant ewe infected with a known strain of Vibrio fetus (Cambridge ovine strain IV) and had been found to agglutinate that organism in dilutions of 1:160.

This slight infection in itself would have been no cause for interest had it not been for the fact that the infected worker had been engaged in research involving Vibrio fetus for some weeks. There is a very definite possibility that the larger gram-positive rod encountered was responsible for the small lesion with the smaller organism restricted to the role of a secondary invader of little or no importance. It is worthy of note, however, that Vibrio fetus is capable of maintaining itself within the male human body.

REFERENCE