

From where	Hepatic fluke, <i>Fasciola gigantica</i> (Giant liver fluke)	<i>Fasciolopsis buski</i> , The giant intestinal fluke
<b>Geographical distribution</b>	<ul style="list-style-type: none"> <li>♥ Common parasite of herbivorous animals especially in cattle raising countries.</li> <li>♥ Human infections are found in many parts of the world in Africa, America &amp; Europe.</li> </ul>	<ul style="list-style-type: none"> <li>♥ Far east.</li> <li>♥ More prevalent in areas where pigs are raised or where aquatic plants are consumed.</li> </ul>
<b>Habitat</b>	Bile ducts in liver.	Small intestine.
<b>D.H</b>	Cattle, sheep and occasionally man.	Man & Pigs. *** R.H: Pigs .
<b>I.H</b>	Snail ( <i>Lymnaea cailliaudi</i> ).	Segmentina (fresh water snail).
<b>Disease</b>	Fascioliasis or liver rot.	Fasciolopsiasis
<b>Morphology</b>	<ul style="list-style-type: none"> <li>➤ Egg (D.S):-               <ul style="list-style-type: none"> <li>• Size : 140 x 70 µm.</li> <li>• Shape : Oval.</li> <li>• Shell : Thin operculated.</li> <li>• Color : Yellowish brown.</li> <li>• Content : Immature (ovum &amp; yolk cells)</li> </ul> </li> <li>➤ Miracidium, Sporocyst &amp; Redia:-</li> <li>➤ Cercaria:-               <ul style="list-style-type: none"> <li>• Formed of body and tail.</li> <li>• Body with oral and ventral suckers, simple intestinal caeca.</li> <li>• Tail</li> </ul> </li> <li>➤ Encysted metacercaria (I.S):-               <ul style="list-style-type: none"> <li>• Spherical in shape.</li> <li>• The cercaria losses its tail and secrete a thick cyst wall.</li> <li>• Present in green aquatic vegetations and water.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Egg (D.S):-               <ul style="list-style-type: none"> <li>• Size : 140 x 70 µm.</li> <li>• Shape : Oval.</li> <li>• Shell : Thin, operculated.</li> <li>• Color : Yellowish brown.</li> <li>• Content : Immature (ovum &amp; yolk cells)</li> </ul> </li> <li>➤ I.H: Segmentina snail. (miracidium sporocyst redia cercaria (leptocercous cercaria).</li> <li>➤ Encysted metacercaria (I.S): encysted on water plants &amp; in water</li> </ul>
<b>Pathogenesis and Symptomatology</b>	<p>1- Migratory phase: Migration of the juvenile worm ⇐ mechanical destruction of tissues &amp; inflammation around migratory tracks.</p> <p>2- Biliary phase: Adult fluke in the bile duct ⇐            1- inflammation and hyperplasia of the epithelium ⇐ oedema &amp; fibrous thickening of the ducts.</p> <p>2-Mechanical obstruction ⇐ back pressure and atrophy of liver parenchyma, cirrhosis and possibly jaundice. 3- Gall bladder: enlarged, oedematous é thickening of its wall ⇐ fibrous adhesion to adjacent organs.</p>	<ul style="list-style-type: none"> <li>➤ Adult worm causes traumatic, mechanical &amp; toxic effects. Ulceration &amp; abscess formation occurs due to its attachment to the intestinal mucosa by the ventral sucker.</li> </ul>

	3- Ectopic location: Migrating juveniles may lose way and reach ectopic sites such as eye, brain,, lungs, kidneys, diaphragm, skin & sub-cutaneous tissue.	
<b>Mode of infection</b>	1- Ingestion of water plants infected with encysted metacercaria. 2- Drinking water contaminated with encysted metacercaria.	1- Ingestion of water plants infected with encysted metacercaria. 2- Drinking water contaminated with encysted metacercaria.
<b>Clinical pictures</b>	1- Invasive or acute phase: Due to migration of juvenile fluke up to the bile ducts. <ul style="list-style-type: none"> <li>♥ Signs &amp;Symptoms include: <ul style="list-style-type: none"> <li>• Fever (40 - 42 oc).</li> <li>• Abdominal pain.</li> <li>• Intestinal disturbances: Loss of appetite, flatulence, nausea and diarrhea.</li> </ul> </li> </ul> 2- Chronic or obstructive phase: Due to adult fluke in the bile duct. <ul style="list-style-type: none"> <li>♥ Signs &amp; Symptoms include: <ul style="list-style-type: none"> <li>• Biliary colic and epigastric pain.</li> <li>• Fatty food intolerance.</li> <li>• Jaundice and pruritus.</li> <li>• Right upper quadrant tenderness.</li> <li>• Hepatomegaly, splenomegaly &amp; ascites.</li> </ul> </li> </ul>	Symptoms depend on the parasitic load: 1- Light infection are asymptomatic. 2- Moderate infection may presented by abdominal pain, nausea & vomiting especially in the morning. 3- Heavy infection causes fever, severe abdominal pain, bloody diarrhea, malabsorption, protein losing enteropathy, generalized oedema, anaemia & partial intestinal obstruction.
<b>Laboratory Diagnosis</b>	1- Clinically: Patient presented with prolonged fever, hepatomegaly and high eosinophilia. 2- Laboratory: <ul style="list-style-type: none"> <li>♥ Direct: <ul style="list-style-type: none"> <li>• Finding the eggs in the patient stool</li> <li>• Ultrasonography.</li> <li>• Computerized tomography (CT).</li> </ul> </li> <li>♥ Indirect: <ul style="list-style-type: none"> <li>• Intradermal test.</li> <li>• Serological tests: I.H.A,C.F.T, ELISA.</li> <li>• PCR.</li> <li>• High eosinophilia</li> </ul> </li> </ul> <p>✚ False Fascioliasis or spurious infection: The presence of eggs in the stool resulting not from an actual infection but from recent ingestion of infected liver containing eggs. This can be avoided by stop eating liver several days (3 - 7 days) before a repeat of stool examination</p>	1- Clinically. 2- Laboratory: Stool examination to detect eggs.

<b>Treatment</b>	<ol style="list-style-type: none"> <li>1- Triclabendazole (Fasinex).</li> <li>2- Dichlorophenol (Bithionol)</li> <li>3- Recently: Nitazoxanide and Mirazid are successfully used.</li> <li>4- Surgical for ectopic flukes or biliary obstruction.</li> </ol>	Praziquantel is the drug of choice.
<b>Life cycle</b>	<p>Fig. (2 - 9) <i>Fasciola</i> life cycle</p> <p>▲ = Infective Stage  ▲ = Diagnostic Stage</p>	<p>CDC  SAFER · HEALTHIER · PEOPLE  <a href="http://www.dpd.cdc.gov/dpdx">http://www.dpd.cdc.gov/dpdx</a></p> <p>▲ = Infective Stage  ▲ = Diagnostic Stage</p>

<b>From where</b>	<b>Halzoun (Parasitic pharyngitis )</b>
<b>Causes</b>	<ol style="list-style-type: none"> <li>1) Mechanical suffocation: due to eating raw liver of sheep and goats as in Lebanon &amp; Syria.</li> </ol> <p>♣ Living adult Fasciola ← attached to the mucous membrane of the pharynx ← inflammation, oedema, dysphagia, dyspnea or even suffocation.</p>
<b>Treatment of halzoun</b>	<ul style="list-style-type: none"> <li>♥ Gargling with strong alcoholic drink ← paralysis of the adult Fasciola or nymph ← separate from the mucous membrane of the pharynx.</li> <li>♥ Administration of emetics.</li> <li>♥ Tracheostomy is indicated in laryngeal obstruction.</li> </ul>
<b>prevention</b>	Proper cooking of liver and animal tissues.