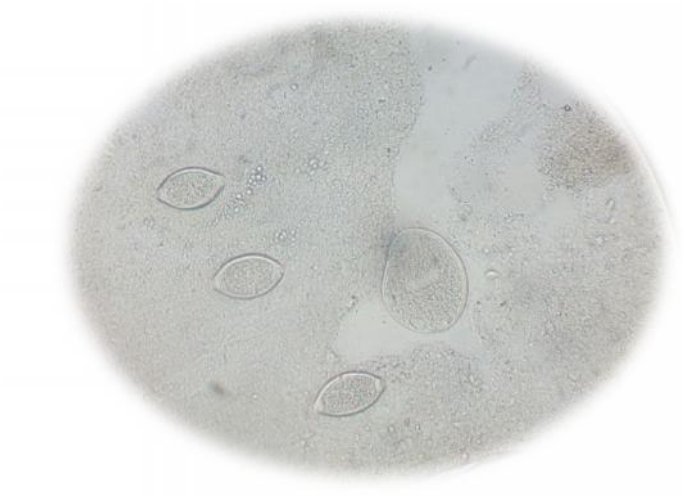
ISSN: 0976-3031

International Journal of Recent Scientific Research

Impact factor: 5.114

MULTIPLE AND SEVERE PARASITIC INFESTATION IN MENTALLY RETARDED PATIENT- A CASE REPORT



Shah.P, Ostwal.K, Rathod.P, Jadhav.A, Shaikh.N and Ingole .K

Volume: 6 Issue: 9

THE PUBLICATION OF
INTERNATIONAL JOURNAL OF RECENT SCIENTIFIC RESEARCH
http://www.recentscientific.com
E-mail: recentscientific@gmail.com

ISSN: 0976-3031

Available Online at http://www.recentscientific.com

International Journal of Recent Scientific Research
Vol. 6, Issue, 9, pp.6158-6160, September, 2015

International Journal of Recent Scientific Research

CASE REPORT

MULTIPLE AND SEVERE PARASITIC INFESTATION IN MENTALLY RETARDED PATIENT- A CASE REPORT

Shah.P, Ostwal.K, Rathod.P, Jadhav.A, Shaikh.N and Ingole .K

Dr. V.M Government Medical College, Solapur

ARTICLE INFO

Article History:

Received 15th June, 2015
Received in revised form 21st July, 2015
Accepted 06th August, 2015
Published online 28st September,2015

Key words:

Balantidium coli, Mentally retarded, *T.solium*, *T.trichura.*

ABSTRACT

Enteroparasites are worldwide in distribution and can cause fatal diarrhoea in malnourished and immunocompromised individuals. This case reports a 10 year old mentally retarded girl whopresented with complaints offever with convulsions since two days and persistent diarrhoeasince 2 months.She was admitted in pediatric ward for the same. Her stool sample was collected for Microscopy and culture. Microscopy revealed abundant tropozoites of *Balantidium.coli*, eggs of *Trichuris trichura* and *Taeniasolium.* After the microscopy report, the patient was immediately started with mebendazole and tetracycline. She recovered after treatment and was discharged after 15 days. We are hereby reporting a rare case report of multiple parasitic infestations from India.

INTRODUCTION

Enteroparasites are widely distributed around the world, and infection usually varies according to region and age. [1,2]*Balantidium coli* is a ciliated protozoon known to infect humans and is the largest protozoon infecting humans and non-human primates.[3] This parasite was first described by Malmstein(1957) in faeces of human suffering from dysentery. [4]Earlier it was known as *Paramecium coli* later same parasite was named as *Balantidium coli* by Stein. [4]The species found in pigs, *Balantidium suis*, is likely identical to *B. coli* from humans. Other species have been isolated from guinea pigs (*Balantidium caviae*), cockroaches (*Balantidium blattarum*), fish, birds, and amphibia. [5]In all, there have been about 50 species described.[5]Balantidiosis is a zoonotic disease and is acquired by humans via the feco-oral route from the normal host, the pig, where it is asymptomatic. [4] In humans also most of the infections are self limited. The species found in pigs, *Balantidium suis*, is likely identical to *B. coli* from humans. Water is the vehicle for most cases of balantidiosis. Human-to-human transmission may also occur. It inhabitats small intestine however multiplication can occur in large intestine, caecum and terminal ileum. [4] Tropozoites are motile due to presence of cilia and they have micronucleus and macronucleus with vacuoles. Death is rare consequence of balantidiosis, but it can be fulminant and fatal in malnourished and immunocompromised patients. [6] To best of our knowledge, this is rare case of diarrhoeadue to *B.coli* from India, first one has been reported from Mumbai. Infection due to *B.coli* is emerging *Trichuris trichiura*, commonly referred to as a whipworm, has a worldwide distribution, particularly among countries with warm, humid climates. [7,8]It lives in large intestine, particularly in caecum and appendix. [4]Diagnosis is made by demonstration of eggs in stool. The eggs are barrel shaped with mucous plug at each ends. They are bile stained. Adult worms can cause petechial haemorrhages, inflammation, oedema and mucosal bleed. Approximately 0.005ml of blood is lost daily. [4]In India *T.trichura* is commonly found. Infestation with 100-200 worms produces light infection whereas infection with >200 worms produces heavy infection. [4]

Genus *Taenia* has 32 recognised species of which *Taenia sagginata* and *Taenia.solium* are of medical importance. [4]*T.solium* is endemic in Central and South America, non Islamic countries of south East Asia, South Africa, Eastern Europe and China. It has also been reported in India especially in people who consume pork. Eggs of Taenia species are bile stained. These two can be differentiated on the basis of acid fast staining. Eggs of *T.sagginata* are acid fast while that of *T. solium* are non acid fast. [4]Pigs are the intermediate host in *T.solium.* After tuberculosis it is second most common cause of Intracranial space occupying lesions. [4]

Pigs are the common sources of both *B.coli* and *T.solium.* Water that comes in contact with excreta of pig may be the source of infection in case of *B.coli.* This is especially harmful in persons with low immunity who are susceptible in development of infection.

Corresponding author:* **Shah.P
Dr. V.M Government Medical College, Solapur

For B.coli, sewage sludge may be another source of infection. Activated sludge, a by-product of sewage treatment, can contain bacterial, protozoan, and metazoan parasites and is a potential threat to health if it is applied as a fertilizer. [9]Crowding in dwellings can facilitate the spread of infection. Others at risk are workers in abattoirs where pig intestines are handled. Farmers working with pig feces are at risk of contracting the infection. Likewise, veterinarians and veterinary students working with sick hogs are at risk of infection.

This is a first case report of this triple infection due to these parasites in India and also second case report of *B.coli* isolated from stool sample.

Case report-A 10 year old girl who was diagnosed as mentally retarded with Attention Deficit Hyperactivity Disorder was admitted in pediatric ward with complaints of fever, convulsions since two days and persistent diarrhoea since 2 months. She was on antibiotics for diarrhoea. She had 4-5 episodes of projectile vomiting's one day back. She was accompanied by care-taker of the Aashram. She had 95% mental retardation.

On examination, she had severe dehydration, high grade fever with no chills and rigors. Her abdomen was tender. Pallor was present. Her B.P was 80/60 and pulse was 90beats/min. Weight was 18kgs.

Her stool sample was sent for microbiological examination.
On Gross examination, stool was watery, foul smelling with mucous flakes present at bottom.

Microscopic examination of stool sample

Saline and Iodine mounts were done. On saline mount there were motile tropozoites of *B.coli.* Tropozoites were oval in shape, 30-300 X30-100µm in size, cilia were present, V shaped cytostome was present, nucleus and vacuoles were also present.[4]There were abundant pus cells.

There were abundant eggs of *Trichuris trichura.* The eggs were barrel shaped, 50X 23 µm in size with mucous plugs at both ends, and were also bile stained. [4] The egg load was calculated for *Trichuris trichura*by Stole's method and it was 300.

There were also eggs of *Taenia solium* which were round, 35-40 µm in size, bile stained with three pairs of hooklets were not acid-fast. [4] Bacterial culture was negative.

Other findings

Haemoglobin level was 7.1g/dl,WBC's-17,165/mm^3,neutrophils-65 %, Lymphocytes-8 %,Monocytes-3 %,Eosinophils-24% i.e there was marked eosinophilia. On complete blood count there was eosinophilic leucocytosis, hypochromia, microcytosis and anisocytosis.

Treatment

She was earlier started with Amikacin as patient had fever as clinicians suspected, a bacillary cause of diarrhoea. After reports of stool microscopyshe was immediately treated with Tetracycline 500 mg four times a day(QID) for 10 days and mebendazole 100mg TDS for 3 days. After 2 days fever decreased and frequency of motions were also relieved. Her repeat stool sample was taken after a week and it was found that there was decrease in parasitic load . Patient completely recovered in 15 days and was discharged.

DISCUSSION

B.coli infection is found world-wide. It is found mainly in tropical and subtropical regions.[6]Most human cases have been reported from South and Central America, China, Iran, Indonesia, Philippines, New Guinea and Pacific Islands.[4] But very few case reports on *Banantidium* infection have been reported so far from India. Four case reports of urinary balantidiasis have been reported (one from Italy,one from USA and two from India). [10]Extraintestinal infection of *B.coli* include the liver, lung and genitourinary tract. [10]Genitourinary sites of infection, including uterine infection, vaginitis and cystitis are thought to occur via direct spread from the anal area or secondary to rectovaginal fistula created from infection with *B. Coli*. [11] One case report of *Balantidium coli*-induced pulmonary haemorrhage with iron deficiency has been reported. [12]Intestinal case report on "Balantidium coli in an HIV-infected patient with chronic diarrhoea" has been reported by *Cermano et al*. [13] To best of our knowledge, only one case report due to *B.coli* causing intestinal infection has been reported from India till date which was from Mumbai. [4].

Trichuriasis is mostly observed in the age group of 2-7 years, where incidence of pica is highest. People living under poor hygienic conditions are at greater risk of developing trichuriasis—including institutionalized or mentally retarded persons and children of the primary school age. [7] In more than half the cases of severe trichuriasis, there is a history of ingestion of non-food substances such as soil and wood. [8]Also hot and moist climate favour the worms survival. In India infection due to *T.trichura* is very common. The worm load for trichuris was 300 which is severe. It can produce prolapse of rectum, retardation of growth, appendicitis and anaemia.[4]Study done in the United States found a 5% incidence of *B. coli* infections at a mentalhospital, and this appeared to increase with length of residence. Poor hygiene among residents of the mental institutionwas associated with

spread of parasites on hands, tableware and dishes and with the practices of pica, coprophagy, andgeophagy. The conclusion is that hygienic surveillance and antimicrobial therapy are necessary in such facilities to limitthe spread of parasites among institutional residents.[6] Our case is severely mentally retarded girl who resides in "Aashram". She was malnourished and cachexic. As both *B.coli* and *T.solium* have pig as their host, there might be some source of pig in nearby area. Water from sewage and soil contaminated with pig excreta may be source of *B.coli* .In institutional populations (mental hospitals, prisons, and orphan asylums), where pigs are an unlikely source of infection, outbreaks are the result of asymptomatic carriers and the difficulties involved in maintaining hygienic control [6]. As described by Federick, poor hand hygiene amongst workers in the mental asylum may be the source of infection. Cases developing in urban areas generally occur in immunocompromised hosts and are self-limiting outbreaks.(6). Mentally retarded people are more prone to development of infection due to *B.coli.*[4]*T.trichura* is also seen in malnourished and mentally retarded with Picas. Various culture methods are available for B.coli detection like Robinson's, Dobell, Balamuth's, Jones medium etc. But they are not available in our laboratory.

So, in our case, severe mental retardation was very important factor leading to multiple parasitic infestation. The diarrhoea was persistentdue to infestation by three parasites.

CONCLUSION

Any parasitic infection in mentally retarded should not be ignored and periodic deworming should be done to prevent severe manifestations. Efforts should be taken to maintain a basic level of hygiene among such children.

References

1. Dinleyici EC, Dogan N, Ucar B, Ilhan H. Strongyloidiasis associated with amoebiasis and giardiasis in an immunocompetant boy presented with acute abdomen. *The Korean Journal of Parasitology* 2003 Dec; 41(4): 239-242
2. Rajesh Karyakarte and Ajit Damle. Medical Parasitology; 3rd Edition. *Books and Allied (p) Ltd*, Kolkata. 2012
3. K.D.Chatterjee. Text book of parasitology protozoology and helmenthology, thirteenth edition.CBS publishers and distributers private limited 2011, Pg 138-140.
4. Subhash Chandra Parija. Textbook of Medical Parasitology: Protozoology and Helminthology, 4th Edition. *All India Publishers and Distributors*, New Delhi. 2013.
5. Baker, J. R.. Parasitic protozoa. Hutchinson University Library, London, United Kingdom1973.
6. Frederick L. Schuster[1,*] and Lynn Ramirez-Avila[2]. Current World Status of *Balantidium coli*.Clin Microbiol Rev. 2008 Oct; 21(4): 626–638.
7. Huang N, Fang H, Chou K, Chung H. *Trichiris trichiura*: an unusual cause of chronic diarroea in a renal transplant patient. *Nephrol Dial Transplant* 2003; 18(11): 2434-35
8. Nimir AR, Aziz MS, Tan GC, Shaker AR. Massive lower gastrointestinal bleeding attributable to heavy whipworm infection and *Salmonella typhi* coinfection: a case report. *Cases Journal* 2009; 2: 8285
9. Amin, O. M. 1988. Pathogenic micro-organisms and helminths in sewage products, Arabian Gulf, country of Bahrain. Am. J. Public Health 78:314-315.
10. T Karuna[1], Sagar Khadanga[2].A rare case of urinary balantidiasis in an elderly renal failure patient. Year : 2014 | Volume : 4 | Issue : 1 | Page : 47-49.
11. Umesh S. Balantidium coli on urine microscopy. Natl Med J India 2007;20:270.
12. A Koopowitz, P Smith, N van Rensburg, A Rudman.Balantidium coli-induced pulmonary haemorrhage with iron deficiencyS Afr Med J 2010; 100: 534-536.
13. Cermeño, Julman Rosiris[a]; Hernández de Cuesta, Isabel[a]; Uzcátegui, Orlando[a]; Páez, Javier[a]; Rivera, Mario[b]; Baliachi, Norka[c]. Balantidium coli in an HIV-infected patient with chronic diarrhoea11 April 2003 - Volume 17 - Issue 6 - pp 941-942.

How to cite this article:

Shah.P *et al*.2015, Multiple And Severe Parasitic Infestation In Mentally Retarded Patient- A Case Report. *International Journal of Recent Scientific Research. 6(9), pp. 6158-6160,*.

****

International Journal of Recent Scientific Research

ISSN 0976-3031