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Scientific letters

Could human bocavirus be a causative agent of parotitis in children?

¿Puede ser el bocavirus humano un agente causal de parotiditis en niños?

Dear Editor,

Parotitis is usually associated with mumps viral infections, but since trivalent measles–mumps–rubella vaccine started to be administrated in different countries, the burden of the disease has been steadily reduced. Nowadays the parotitis cases are usually related to other viral infections in countries with high vaccination coverage.[1,2] Although Epstein Barr virus (EBV) has been recognized as the most frequently detected microorganism, other respiratory viruses such as parainfluenza virus (PIV) or adenovirus[1] have been described associated with parotitis.

The human bocavirus (HBoV) has been identified in respiratory infections in children in a large number of studies, mainly in infants less than 2 years of age during late autumn[3] being recurrent wheezing episodes and fever the most frequent symptomatology. To date, only two cases of parotitis have been reported associated with bocavirus infection, one of which being a coinfection with PIV 3.[1,2] These two cases were detected in two prospective studies that surveyed the frequency of several viruses in sporadic parotitis in Korea and U.S.A. The authors observed an incidence of HBoV infection of 0.4–1% in their studied cases.

We report a child with parotitis and an acute respiratory tract infection in whom HBoV was the only virus identified.

A 17-month-old male, with a history of recurrent wheezing presented at the emergency room in November with 48 h of left parotid swelling. He had had fever for a few hours (maximum 39.2 °C), and respiratory distress that had not improved despite receiving bronchodilators and amoxicillin-clavulanate for two days. Physical examination revealed high fever, left parotid inflammation without erythema, expiratory wheezing and hypoxaemia, requiring admission and treatment with bronchodilators and oxygen therapy. The chest X-ray demonstrated an infiltrate in the right middle lobe. Cervical ultrasound revealed an enlarged left parotid gland, with multiple internal lesions of low echogenicity in relation to intraglandular inflammatory changes. Intraglandular adenopathy and bilateral laterocervical chains were also observed. The blood test showed normal haemoglobin and platelets; 13,000 leukocytes (44% neutrophils); C-reactive protein 41 mg/L and amylase 381 U/L. Blood culture was negative, and a multiplex polymerase chain reaction in nasopharyngeal aspirate taken at admission (CLART® Pneumovir array assay that identifies adenovirus, metapneumovirus A,B, parinfluenza 1,2,3,4, rhinovirus, respiratory syncytial virus A,B, bocavirus, influenza A,B,C, enterovirus and coronavirus 229E, OC43 & NL63) was positive for HBoV. Mumps serology detected negative IgM and positive IgG titres. He remained afebrile during admission, with improvement in his respiratory distress and disappearance of parotid swelling, then being discharged within 3 days.

Two weeks after admission the patient was asymptomatic, cervical ultrasound was normal except for some intraparotid adenopathy, and amylase titre was 77 U/L. Control nasopharyngeal aspirate in this moment was negative.

Human bocavirus has been associated with lower respiratory tract infections, mainly wheezing and pneumonia, in young children.[3–5] It has also been described as a causative agent of upper respiratory tract infections, mainly adenoiditis and otitis, demonstrating its affinity with this type of tissues.[6,7] To date, only in two cases has HBoV been associated with mumps but its pathogenic role as a causative agent of parotitis is discussed, since in one case it has been detected in coinfection with PIV 3.[1,2] However, the parotid gland could be a target of infection for this virus, as occurs in adenoids, where some authors have identified HBoV in up to 43% of the specimens obtained from children with adenoidal disease.[7]

Our patient had the typical symptomatology associated with HBoV infections with a wheezing episode, and with infiltrate in the chest X-ray. In addition, he was in the most frequent age-range for this virus infection, developing the disease during late autumn when most HBoV infections occur.[3] The analytical data were also consistent with those described in HBoV infections.[3] Bacterial agents were not detected. He was correctly vaccinated and mumps serology showed the presence of IgG titres. Acute EBV infection was also ruled out. The clinical picture evolved favourably and the nasopharyngeal aspirate control was negative two weeks after the acute episode. Although causality of HBoV is difficult to establish, serology has demonstrated that HBoV has a pathogenic role in respiratory infections.[8–10] Unfortunately in our centre we do not have HBoV serology available, but we think that our case adds to those already described to make it consider that it may have an etiological role.

We consider that HBoV should be taken into consideration as an infrequent but possible causative agent of acute parotitis in young children. Prospective studies should be designed to verify the truly pathogenic role in parotitis cases.

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Uso de adenosin deaminasa como indicador para seleccionar líquidos pleurales para cultivo y/o técnicas moleculares para detección de micobacterias

Use of adenosine deaminase as a marker for selecting pleural fluids for culture and/or molecular techniques for detection of mycobacteria

Sr. Editor:

La tuberculosis pleural (TP) es una causa importante de tuberculosis (TB) en nuestra comunidad de Castilla y León y junto a la genitourinaria es la causa más frecuente de TB extrapulmonar. El porcentaje de cultivos positivos en líquidos pleurales (LP) con respecto al total de cultivos positivos para *Mycobacterium tuberculosis* (MT) ha oscilado entre un 5,18% en el año 2013 y un 6,54% en el año 2016. El número de casos de TP ha permanecido en torno a los 14 casos anuales confirmados por cultivo, mientras que al mismo tiempo se producía un descenso del número de casos de TB pulmonar. Un estudio previo de 17 años de duración realizado en nuestra área de salud del Bierzo[1] reveló que tan solo un 2,5% de los LP son positivos para el cultivo de MT. Ante esta situación nos propusimos buscar un sistema de selección de muestras de LP para mejorar el rendimiento de los cultivos de micobacterias y optimizar el uso de técnicas moleculares sobre los mismos. Para ello se evaluaron un total de 200 muestras de LP recogidas entre los años 2015 y 2018. A todas ellas se les determinó el valor de adenosin deaminasa (ADA) estableciendo el punto de corte en mayor o igual a 30 U/l, que es a partir del cual se considera que hay sospecha de TP en nuestra área de salud. Todas las muestras se sembraron en medios de cultivo sólidos (Coletsos y Middlebrook 7H11) y en medios líquidos automatizados (BacT/ALERT® MP) incubando al menos durante 6 semanas. Cuando el valor de ADA superaba el punto de corte, se realizaba además una resiembra del medio líquido automatizado al final de su incubación y se prolongaba la de todos los frascos al menos 3 semanas más. La identificación de MT se realizó mediante técnicas moleculares (GenoType® MTBC y GenoType® MTBDR, Hain) y la PCR sobre muestra directa se realizó empleando GeneXpert® MT-RIF (Izasa®). Cuando se prescinde del valor de ADA, en tan solo un 3% de las muestras de LP se obtiene crecimiento/PCR^{+} de MT. Cuando se utiliza un valor de ADA igual o superior a 30 U/l (51 casos, el 25,5% de los LP) el porcentaje de crecimiento/detección por PCR se eleva hasta el 11,76% (6 casos). Como se indica en la tabla 1, en todos ellos el derrame pleural fue de claro predominio linfocitario con cifras que oscilaron del 54 al 100%. En solo 2 casos se obtuvo crecimiento de MT en medios sólidos y tan solo 2-3 colonias crecieron después de la sexta semana de incubación. El crecimiento de MT en medios líquidos fue en 4 casos con una media de 22 días, siendo negativo en 2 casos. En ninguna de las 149 muestras de LP con valores de ADA inferiores a 30 U/l se obtuvo crecimiento de MT. Según una reciente revisión, la determinación de los valores de ADA estableciendo puntos de corte adaptados a regiones con alta tasa de TB sería un método con alto poder discriminativo. En cambio, en regiones de baja incidencia tendría un alto valor predictivo negativo[2].

Tabla 1
Casos de tuberculosis pleural en los que se obtiene crecimiento de micobacterias, y en los que se especifica el valor de la ADA, el porcentaje de linfocitos en el LP, el resultado del cultivo en medios sólidos y líquidos y de la detección por PCR en muestra directa

N.°	Paciente	ADA (U/l)	Linfocitos en LP (%)	Cultivo MSN.° colonias	Cultivo MLdías incubación	PCR	Observaciones
1	PUF	55	98	NEG	NEG	POS	C. telefonía
2	SMM	50	100	NEG	24,3	NEG	
3	SRO	66	56	NEG	25,9	—	
4	MMB	31	54	NEG	24,6	—	
5	LCG	63	96	3 colonias 6.ª semana	14,5	POS	Falta *wild type* 3 de *rpoβ*
6	MPP	39	85	2 colonias 6.ª semana	NEG	—	

ADA: adenosin deaminasa; LP: líquido pleural; ML: medio de cultivo líquido automatizado para micobacterias (BacT/ALERT® MP, BioMérieux); MS: medios de cultivo sólidos para micobacterias (Coletsos, Middlebroock 7H11); NEG: negativo; PCR: detección de *Mycobacterium tuberculosis complex* mediante amplificación genómica (GeneXpert®, Hain Lifescience); POS: positivo.