MENINGEAL CARCINOMATOSIS AND POLYNEUROPATHY IN GASTRIC SIGNET RING CELLS ADENOCARCINOMA

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OBJECTIVE: To describe a complex clinical case of meningeal carcinomatosis and possible paraneoplastic syndrome in a patient affected by gastric cancer.

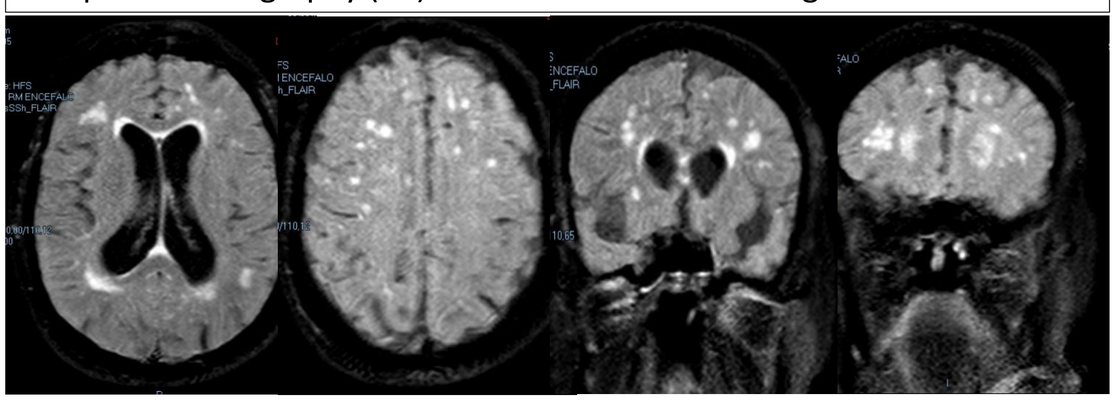
MATERIALS AND METHODS: Clinical records revision.

Clinical features

A 75-old patient was admitted to our hospital for rapidly worsening (over one week) drowsiness, nausea, lack of appetite, neck pain and reduced strength at the lower limbs.
He developed visual and hearing loss and anisocoria and his level of consciousness dramatically decreased.
At neurological examination areflexia and neutral plantar response were observed while limb strength and sensibility were not evaluable as patient was uncooperative.

Imaging Exams

Brain Magnetic Resonance Imaging (MRI) showed nonspecific leucoencefalopathy.
Computed Tomography (CT) scan of the abdomen: negative for tumours.



Laboratory exams

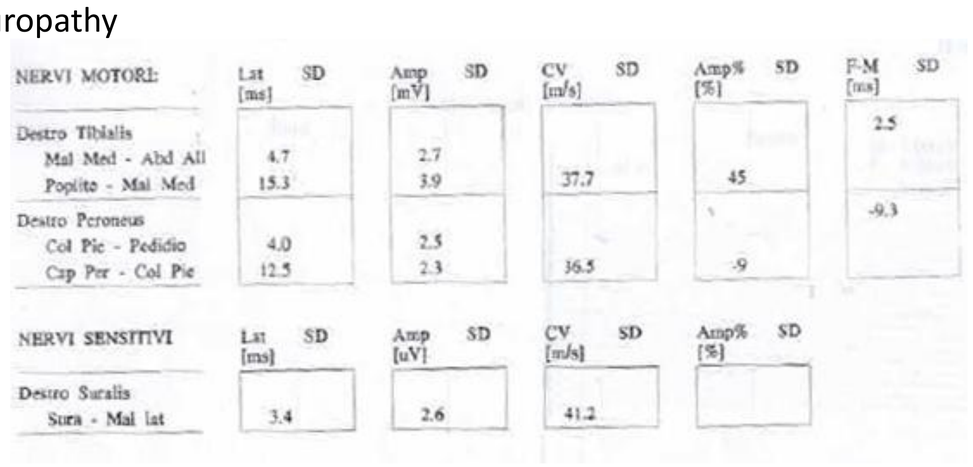
A first cerebrospinal fluid (CSF) examination showed no abnormalities.
At a second CSF examination, hypercellularity and hyperproteinorrachy with normal glucose and cytology were found.
Blood examination revealed strongly elevated levels of CA 19.9.
Paraneoplastic autoantibodies tests disclosed the presence of IgM GD1b and IgM GM1 antigangliosides, antiGluR3 peptide and anti-basal ganglia autoantibodies.

	24.06.15	01.07.16
CA 19.9	22069	34.765

Antigangliosides	Results
GD1a (IgG)	0 (>50)
GD1a (IgM)	35 (<50)
GD1b (IgG)	0 (<50)
GD1b (IgM)	279 (<50)
GM2 (IgG)	0 (<50)
GM 2 (IgM)	878 (<50)
GQ1b (IgG)	0 (<50)

Other exams

Electroencefalography was normal.
Electroneurography revealed an axonal and demielinizating sensory-motor neuropathy



NERVI MOTORI:	Lat [ms]	SD	Amp [mV]	SD	CV [m/s]	SD	Amp% [%]	SD	F-M [ms]	SD
Destro Tibialis									2.5	
Mal Med - Abd All	4.7		2.7							
Poplite - Mal Med	15.3		3.9		37.7		45			
Destro Peroneus									-9.3	
Col Pic - Pedidio	4.0		2.5							
Cap Per - Col Pie	12.5		2.3		36.5		-9			

NERVI SENSITIVI	Lat [ms]	SD	Amp [uV]	SD	CV [m/s]	SD	Amp% [%]	SD
Destro Suralis								
Sura - Mal lat	3.4		2.6		41.2			

Autoimmunity, tumour and infectious makers,	
HIV 1, 2 anticorpi	negative
Markers epatite B	negative
Markers epatite C	negative
ANA	1/320 (VN <1/160)
Anti nDNA	negative
Anti-ro/SSA	18 UA/mL (<10)
Anti-La/SSB	0 UA/mL
Anti-Scl70	9 UA/mL (<10)
Anti-Jo1	0 UA/mL
Anti-Sm antigen	0 UA/mL
Anti-SmRNP antigen	5,9v UA/mL (<10)
C-ANCA	15 UA/mL (dubbio 10-20)
P-ANCA	0,7 UA/mL (<10)
CEA	123,9 ng/mL (0-10)
AFP	3 ng/mL (0-10)
CA 19.9	22069 U/mL (0-37)
CA 125	91,8 U/mL (0-35)
CA 15-3	15,6 U/mL(0-30)
NSE	10,45 microg/L (0-12,5)
Ac. Folico	6,30 ng/ML (3-16)
Vitamina B12	>2500 pg/mL (100-700)

	LCR 22.06.15	LCR 25.06.15
Proteins	45 mg/dL	52 mg/dL
Cells	0	25/mmc (10% granulocites)
Glucose	48 mg/dL	63 mg/dL
Link index	Not performed	0,36
Quoziente albumina	Not performed	6,5
Colutrale germi e miceti, PCR virus	Not performed	negativo

Clinical course

Patient's conditions rapidly got worse and he died one month after symptoms' onset.
Autopsy revealed diffuse microglandular enteroid gastric cancer with signet ring cells, ischemic mesencephalic necrosis due to perivascular spaces neoplastic colonization and neoplastic colonization of perivascular spaces of cerebral and cerebellar arachnoid.

DISCUSSION

Leptomeningeal carcinomatosis (LMC) is a malignant infiltration of the pia mater and the arachnoid membrane. The development of LMC from a gastric cancer is a very rare occurrence, presenting in poorly differentiated adenocarcinomas with signet ring cell component[1].
The concurrence of cancer and polyneuropathy may be observed in some patients, but since they both are frequent conditions it is still unclear if this phenomena could be fortuitous[2]. A study demonstrated that even if low levels of anti- antibodies can be found, they probably are a consequence of a natural anti-cancer immunity[3].

CONCLUSION

Our patient had a complex cancer-related syndrome characterized by altered mental status and polyneuropathy, with an acute onset and an ultra-rapid progression.
Even if the presence of onconeural autoantibodies is often thought to be an epiphenomena and leptomeningeal carcinomatosis may explain part of this patient's clinical picture, we hypothesize that autoantibodies, especially anti-gangliosides, may have played a role.
This suggests that further efforts are needed in order to describe atypical paraneoplastic syndromes.

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