patients presented with symptoms of pituitary dysfunction. ENT disease, pulmonary and kidney involvement were present in nine, six and four patients, respectively. None of the patients had isolated pituitary involvement. Diabetes insipidus (DI) was detectable in seven patients but was commonly asymptomatic. Eight patients had hypogonadism, five hypothyroidism, two hypocortisolism, and one had normal anterior pituitary function with isolated DI. Head MRI revealed a sellar mass with peripheral enhancement or diffuse pituitary enlargement in all patients. Complete remission of GPA was seen in all, after treatment with cyclophosphamide and rituximab in seven and two patients, respectively. After a median follow up of 80 months (range 6–128), all but one patient had decrease in size of the pituitary enlargement within 1 year of treatment. DI resolved in five out of seven patients, and persisted in the other two. Of the eight patients with anterior pituitary dysfunction, resolution was seen in three, improvement in three, and persistent dysfunction in two patients.

Conclusion. — Pituitary involvement is an uncommon manifestation of GPA and occurs concomitantly with other organ involvement. The majority of these patients have pituitary dysfunction, which can be asymptomatic at presentation. Whereas imaging findings typically respond to remission induction therapy, pituitary dysfunction may persist.

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Inter-observer reproducibility of two CT scan staging systems to evaluate sinonasal involvement in granulomatosis with polyangiitis (Wegener’s)

P. Díaz1, G. Faba2, D. Contreras2, R. Zunino3, C. Ortega3, F. Silva1
1. Pontificia Universidad Católica de Chile, Departamento de Inmunología Clínica y Reumatología, Santiago, Chile
2. Pontificia Universidad Católica de Chile, Departamento de Otorrinolaringología, Santiago, Chile
3. Pontificia Universidad Católica de Chile, Departamento de Radiología, Santiago, Chile

Introduction. — Rhinosinusitis (RS) is the most common manifestation of granulomatosis with polyangiitis (GPA). Standardized tools to evaluate disease extension and to monitor therapy response are needed. Sinus computed tomography (SCT) is the preferred imaging modality for evaluating RS. Many staging systems exist to quantify RS based on SCT; Lund-Mackay staging (LMS) and Newman staging (NS) systems are the most reproducible and simple in infectious/allergic RS.

Purpose. — To determine the reproducibility of LMS and NS between evaluators of different specialties and level of expertise in the evaluation of RS in GPA.

Patients. — Retrospective evaluation of 15 patients with sinonasal GPA and 15 subjects with non-vasculitic rhinosinusitis (NVRS) was performed. SCT were reviewed by six evaluators from different specialties (radiology (n = 2), rheumatology (n = 2) and ENT (n = 2)) and level of expertise (one staff and one resident in each specialty), all blinded to the clinical diagnosis. Evaluators reviewed the published LMS and NS scores and received a brief training to apply it. Results are expressed as median (range) and analyzed with Pearson test for correlation and Mann–Whitney to compare medians.

Results. — GPA and NVRS groups were similar in gender (50% female), age [60 (28–68) vs. 56 (25–67) yr] and ESR [17 (2–68) vs. 14 (2–84) mm/h]. Disease duration was longer in GPA than NVRS [32 (1–232) vs. 1 (1–9) month, p < 0.001]. Global scores were lower in GPA than NVRS using either LMS (4 vs. 12, P < 0.01) or NS (6 vs. 17, P < 0.01). A high correlation (r > 0.9, P < 0.01) was observed between all evaluators for LMS and NS scores regardless of diagnosis, specialty and expertise level. No correlation was found between ESR or disease duration and LMS/NS scores.

Conclusion. — LMS and NS represent simple and reproducible methods to quantify RS in GPA patients with no need of formal radiological training. The correlation with disease activity or damage and their utility for monitoring GPA subjects must be tested in a larger cohort of patients.

Further readings

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Pathogenesis of atherosclerosis in granulomatosis with polyangiitis

R. Haji-Ali1, G. Hoffman1, R. Silverstein2, T. Clark1, C. Langford1
1. Cleveland Clinic, Cleveland, USA
2. Medical College of Wisconsin, Milwaukee, USA

Introduction. — Previous studies from our group suggested that the inflammatory events that occur during relapses in patients with granulomatosis with polyangiitis (GPA) may have a direct role in the pathogenesis of atherosclerosis. We also showed that circulating microparticle (MPs) levels were elevated during relapse and correlated with platelet reactivity. We further elucidated possible mechanisms by which MPs act at the interface between inflammation and atherosclerosis in GPA.

Patients. — Human dermal microvascular endothelial cells (huDMVEC) were cultured in Egm-2MV media. MPs isolated from plasma from GPA patients were added at various ratios to the huDMVEC and incubated for timed periods. Cells were then detached, washed, and re-suspended in buffer and analyzed by immunofluorescence flow cytometry with anti-ICAM-1 IgG to detect endothelial cell activation. An isotope-matched control IgG was used as control. In addition, fluorescent-tagged normal human platelets were incubated with GPA patient-derived MPs (MP/platelet ratio of 10:1) and platelet activation was detected by flow cytometry with PAC-1, an antibody to the activated form of the α2bβ3 integrin.

Results. — GPA patient-derived MPs, when incubated for 4 h with huDMVEC, induced surface expression of ICAM-1. MP-depleted plasma was used as a control and did not influence ICAM-1 expression. ICAM-1 induction by MPs was blocked by cycloheximide indicating a requirement for new protein synthesis and showing that the ICAM-1 was not transferred to the cells by the MPs. Platelet surface expression of activated α2bβ3 integrin was also significantly enhanced when platelets from healthy donors were pre-incubated with patient-derived MPs and then exposed to low doses of ADP (1 μM).

Discussion. — Our findings demonstrate that MPs isolated from plasma of GPA patients can activate platelets and vascular endothelial cells.

Conclusion. — This study suggest possible roles for MPs as an interface between inflammation and athero-thrombosis in GPA.

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