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Julio C. Delgado, MD, MS, Director of Laboratories

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB	3/30/1965
Gender:	Male
Patient Identifiers:	01234567890ABCD, 012345
Visit Number (FIN):	01234567890ABCD
Collection Date:	00/00/0000 00:00

SP Final Report

ARUP test code 8070060

Submitting Physician

Clinical History

Diabetes mellitus diagnosed in 2012, well controlled, hypertension, longstanding proteinuria (more recent about 3 g), on ACE inhibitor fro several years. Creatinine 0.77 mg/dL, normal C3 and C4.

Diagnosis

KIDNEY, NATIVE, NEEDLE CORE BIOPSY:

- MEMBRANOUS GLOMERULOPATHY, STAGE 2-3.
- MILD ARTERIOSCLEROSIS.
- SEE COMMENTS.

03/26/19 MPR/MPR
I certify that I personally conducted the diagnostic evaluation on the above specimens and have rendered the above diagnosis(es):

Monica P Revelo, M.D., Ph.D
electronic signature

University of Utah Health Care, Department of Pathology
Huntsman Cancer Hospital
1950 Circle of Hope Drive, Rm N3100
Salt Lake City UT 84112

H=High, L=Low, *=Abnormal, C=Critical

Comments	The biopsy shows by light microscopy, immunofluorescence and electron microscopy morphologic features diagnostic of membranous glomerulopathy, stage 2-3. The pattern of immunofluorescence staining with positive PLA-2R and the absence of mesangial deposits favor a primary membranous glomerulopathy. There are also mild changes of arterionephrosclerosis. Overt features of diabetic glomerulosclerosis are not identified. Dr. Specter was contacted on March 26, 2019. The performed test(s) were developed and their characteristics determined by ARUP Laboratories. Please see Compliance Statement B at website aruplab.com/CS. Appropriate controls were performed at ARUP Laboratories, Inc. and stain appropriately.
Gross Description	Received on 03/22/2019 is a kidney biopsy kit from which consists of 3 containers labeled . Specimen one is submitted in formalin for light microscopy. It consists of 3 pieces of tan tissue measuring 1.6, 1.6, 0.2 cm. The specimen is submitted in cassette 1A. Specimen two is submitted in Zeus fixative for immunofluorescence. It consists of 1 piece measuring 0.7 cm. It is submitted to the Histology Laboratory for frozen cutting and then to the Immunohistochemistry Laboratory for immunofluorescence staining. Specimen three is submitted in glutaraldehyde for electron microscopy. It consists of 2 pieces of tan tissue measuring 0.3, 0.2 cm. The specimen is submitted to the Electron Microscopy Laboratory. MPR/KNT 03/22/19
Light Microscopy	Two H+E-, two PAS-, two trichrome- and two Jones' silver-stained slides are reviewed. Serial sections through the biopsy show three fragments of renal cortex and medulla containing up to 32 glomeruli, five of which are globally sclerosed and two exhibit segmental sclerosis in peripheral location with adhesions to Bowman's capsule. The remaining glomeruli do not show increase in mesangial matrix nor increase in mesangial cellularity. The capillary loops appear segmentally wrinkled and contain numerous holes and frequent spikes. Splitting, endocapillary proliferation, and crescents are not identified. There is minimal interstitial fibrosis nor tubular atrophy (5%). There are occasional tubules with luminal dilatation and containing proteinaceous debris. The arterioles appear unremarkable. A large artery shows mild intima and media fibrous thickening.

Immunofluorescence	Duplicate frozen sections are stained with antisera for IgG, IgA, IgM, C3, C1q, albumin, fibrinogen, and kappa and lambda light chains. There are seven glomeruli available for examination, none of which are globally sclerosed. There is 3+ diffuse fine granular capillary wall staining for IgG and 1+ Kappa and lambda light chains. Trace, segmental, granular mesangial stain is seen with IgM. There is 2+ arteriolar staining with C3. IgA, C3, C1q and fibrinogen are negative in the glomeruli. Albumin highlights occasional reabsorption droplets. Controls stained appropriately. PLA-2R immunofluorescence stains is preformed with appropriate positive control. There is diffuse 2+ granular capillary wall staining in the patient's sample.
Electron Microscopy	Toluidine blue stained sections show five glomeruli available for examination, one of which is globally sclerotic, there are no significant mesangial or endocapillary hypercellularity in remaining glomeruli. On ultrastructure, the glomerular basement membranes are slightly thickened but are of normal texture and contain numerous subepithelial electron dense deposits some of them with associated basement membrane reaction. There are several intramembranous electron dense deposits. There are no subendothelial electron dense deposits. The epithelial cells show occasional cytoplasmic vacuoles and there is marked foot process effacement involving nearly completely the capillary loop circumference. The endothelial cells do not contain reticular aggregates in the loops examined. The mesangial areas are unremarkable and electron dense deposits are not present. The tubular basement membranes are of normal thickness and do not contain electron dense deposits. The tubular epithelial cells contain frequent cytoplasmic vacuoles.

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Submitting Physician	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Clinical History	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Diagnosis	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Comments	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Gross Description	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Light Microscopy	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Immunofluorescence	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Electron Microscopy	SP-190-007112	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical